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THIS WEEK'S NEWS

ON THE RECOMMENDATION of the R.I.B.A., the King has awarded the Royal Gold Medal for Architecture to Mr. E. Vincent Harris, O.B.E., R.A., F.R.I.B.A. *p.* 93

SOUTH SHIELDS COUNTY BOROUGH invite architects to submit designs in open competition for the proposed Marine and Technical College buildings to be erected in the borough. *p.* 106

MR. DUDLEY F. COX, the chairman and managing director of Haymills, Ltd., this week became the president of the London Master Builders' Association. A brief summary of his career is given on *p.* 112

SOME CRITICISMS of the present organisation of the building industry were made by Mr. Harry Moncrieff, F.R.I.B.A., A.M.T.P.I., in a recent address to the Housing Centre, on "Post-War Building by Housing Associations." He referred to present-day building costs as "a very serious question for housing associations." *p.* 113

THE NATIONAL JOINT COUNCIL for the Building Industry have adjourned to enable two committees, which have to report within a month, to examine the possibilities of reaching settlement on the various proposals submitted from both sides of the industry, including the operatives' application for a general wage increase of 6d. per hour. *p.* 117

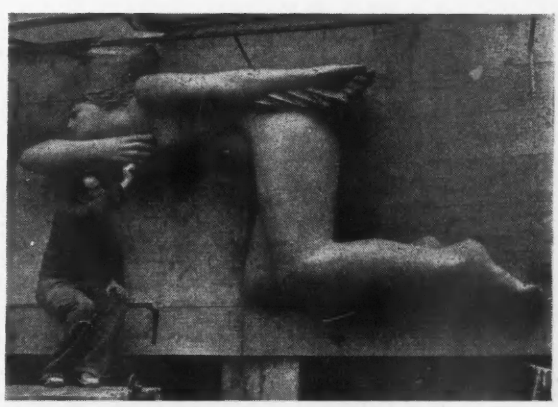
FOLLOWING their recent disputes, the employers and operatives engaged on the erection of exhibition stands have reached a new form of agreement. *p.* 117

EFFICIENCY IN BUILDING

FOLLOWING the publication last June of the reports of the Working Party and the Anglo-American Productivity Team, the Minister of Works has had a series of discussions with the National Consultative Council on the steps to be taken to implement the two reports. That series of meetings has now been concluded and the Minister has issued a Press statement describing the progress made. The statement (which was given in full in our last issue) covers a wide range of subjects from incentives and controls on the one hand to bye-laws and the registration of plumbers and electricians on the other.

It is to be hoped that the statement will be carefully studied and discussed throughout the industry. Too often in the past, Government building policy has been surrounded by a shroud of secrecy and the Minister is to be complimented on his decision to publish the results of his discussions with the National Consultative Council. The problem of increasing efficiency is one which concerns every member of the industry and on which the wisdom of every member of the industry should be brought to bear. Most members of the industry belong to some professional, trade or technical organisation. The views of these organisations—junior as well as senior—should be invaluable in the task of increasing efficiency. The problem is too important to allow of organisational jealousies.

It will perhaps be useful here to discuss one or two matters which we think require further consideration. First among these is the part which incentives can play in increasing productivity. The statement begins by recording the Consultative Council's approval of the recent agreement on incentives. Now there is no doubt that incentives can play an important part in increasing output, and it would certainly be foolish to criticise the recent agreement before it has come fully into operation. But it must not be overlooked that incentives are only one factor in the situation. The Working Party took the view that it was the scarcity of materials which contributed more than any other single factor to the fall in productive efficiency (Working Party



SCULPTURES FOR FACADE OF FESTIVAL PAVILION:—Three large relief figures—representing Light Industry, Heavy Industry and Electricity—are being prepared by students of the Camberwell School of Arts and Crafts. The figures are three times life size and when finished will be placed on the façade of the Pavilion of Power and Production at the Festival of Britain exhibition. In our illustration Dr. K. Vogel, in charge of sculpture, is seen at work on "Electricity"—one of the figures. It is 12 ft. long.

report, paragraph 50). It is therefore a serious weakness that the Minister's statement should open with a reference to incentives and nowhere discuss the more important question of the supply of materials. The materials problem is not simply one of increasing total supplies ; the Working Party also drew attention to the difficulties caused by the enforced use of substitutes. Until these problems have been considered and solved the part which incentives can play will be strictly limited.

Second, we think that further consideration should be given to the matter of Departmental responsibility for the building programme. The Consultative Council have come to the conclusion that in present circumstances there is nothing to be gained by altering the present arrangements. This is in direct contrast to the Working Party's suggestion (paragraph 59 of their report) that responsibility should be centred in a single Government Department. It cannot be said that the present system, under which the Central Economic Planning Staff lays down monetary ceilings for each Department concerned, is a satisfactory one, and it is surprising that the National Consultative Council should have expressed their approval of it.

Finally, we would draw attention to the question of planning and bye-law controls. The Minister's statement draws attention to the modifications in planning control made last year, and announces that an attempt is to be made to standardise local authority forms of application for bye-law consent. Nevertheless most architects and builders will feel that there is still far too much paper work, and that something more might be done to reduce its amount. For instance, an attempt might be made to formulate a combined form of application for planning permission and bye-law approval, and also to remove overlapping controls of which there are still far too many.

If in these remarks we have seemed critical of the National Consultative Council's review, that is because we have deliberately selected matters requiring further discussion rather than those on which there will probably be general agreement. There is much in the statement with which we agree and we welcome it as an indication of what is being done about the urgent problem of greater efficiency in building.

PRODUCTION IN HOUSE BUILDING

LAST week we briefly reviewed a Report on Productivity in House Building as measured by a pilot sample survey carried out by the Ministry of Works. This report claimed that from the data obtained it was possible not only to make some assessment of the increase of productivity in terms of man-hours and labour costs but also to identify some of the factors which caused the increase and to estimate with reasonable accuracy the influence of each factor. Nevertheless the survey was only a pilot survey designed to test new methods of investigating output in the building industry. Certain conclusions were reached but the Reporters find it necessary to emphasise that the figures quoted in the Report are averages only and that most of them are subject to wide variation.

These qualifications must be kept in mind when studying the main conclusions, which were that:—

(*a*) Incentives reduced man-hours by 60, labour costs by £2 (net) and total costs by £5 (net) for every £5 paid in bonus.

(*b*) The general rise in productivity on average during the period covered by the inquiry reduced man-hours by 2½ per cent., or almost 75 on the standard house, and labour costs, after allowance for the increase in wage rates, by £2 10s. The effect on total costs was more than counterbalanced by the rise in price of materials.

(*c*) Each additional 10 houses on the site reduced man-hours by 2½ per cent., labour costs by 2½ per cent. or about £10 on the standard house, and total costs by £2 10s. In addition there was a reduction of the time required per super foot in the case of houses above the average area of 935 ft. super.

There were therefore three main factors affecting productivity as revealed by this Survey, namely : incentives; a general rise in productivity resulting from the easing of post-war difficulties, and the size of the contract. The separate effects of these factors could obviously not be isolated. The conclusions are those that might reasonably have been anticipated and are no doubt proved or at least supported by the statistics quoted.

Unfortunately, the Survey was restricted to local authority sites and there are no comparable figures for houses built commercially. It was indeed impossible to collect such comparable figures because there have been no comparable private enterprise sites. One is therefore left without any answer to the most important question of all, namely: Is the contracting method of building houses as productive as the commercial method ? This omission is no fault of the compilers of the Report but it detracts very considerably from its usefulness.

Indeed for all practical purposes the Report is valueless; its conclusions are given with such qualification as to leave the protagonists of incentive payments without sufficiently powerful ammunition to back their arguments. This is a great pity because obviously a great deal of labour has gone into the compilation of the statistics upon which the Report is based. These weaknesses, both the unconvincing nature of the conclusions and the omission of comparable information relating to private enterprise methods, appear to have been fully appreciated by the Reporters, who have gone to considerable trouble to explain what they describe as the statistical approach to the problem with which they were faced. The impression left on one's mind is that the purely statistical approach is not the right one; it is all very well as a student's approach to a problem but, in industry, the incentive of profit and the risk of loss supply a better avenue of approach, one that will continue to be lacking until there is a revival of commercial house building.

ROYAL GOLD MEDAL FOR ARCHITECTURE

Award to Mr. E. Vincent Harris

AT a Council meeting of the Royal Institute of British Architects held on Tuesday, January 9, Mr. E. Vincent Harris, O.B.E., R.A., F.R.I.B.A., was elected by the members as a fit recipient of the Royal Gold Medal for Architecture for the year 1951. His Majesty the King has approved the award, and the medal will be presented to Mr. Vincent Harris at the general meeting of the Royal Institute on Tuesday, April 3, at 6 p.m. **Some details of Mr. Harris's career are on page 96**

NOTES AND NEWS

Hospital Planning

THE post-graduate symposium on hospital planning, organised by the A.A. in December last, is something on which those responsible for the idea are much to be commended. The extension of the Health Services envisages a corresponding building programme, and it is a matter of concern that so little hospital work of a permanent nature has been built in this country for ten years. The average hospital is far behind current international practice in convenience, planning and standard of finish; Mr. Lionel Pearson goes further, even, and has said: "At the moment our hospitals are a national disgrace . . . the average English hospital is beyond words."

Two main points emerge from the symposium—the need for research into the detail of planning of hospitals, and, even more important perhaps, the wider issue of local examination of the particular hospitalisation needs of the area in terms of cost, efficiency and convenience of location. The former matter is one mainly for architects in conjunction with the medical and nursing professions, and it is satisfactory to know that an investigation sponsored by the Nuffield Provincial Hospitals Trust and by Bristol University—now under the direction of Mr. R. Llewellyn Davies — is now being conducted into the technical requirements of hospital planning; the main report is not expected to be published for two years, but details of pieces of research of which immediate use may be made by architects will be made public from time to time.

The Royal Gold Medallist

THE AWARD by the King, on the recommendation of the R.I.B.A., of the Royal Gold Medal for Architecture to Mr. E. Vincent Harris will be widely acclaimed. Mr. Vincent Harris was elected a Fellow of the Royal Institute of British Architects in 1914, and became an Associate of the Royal Academy in 1936, a Royal Academician in 1942, and has held the office of Honorary Treasurer since the latter date.

It has been said of him that no other living architect has entered for so many competitions and at the same time been placed in so many. His most important commissions, notably the Manchester Reference Library and extensions to the Town Hall, and the new block of Government offices now being erected between the Embankment and Whitehall, came to him in this way. He has been to America three times, on each occasion to study some particular type of building which he was about to erect in England.

Institute of Contemporary Arts

AFTER A LONG and patient wait (some 15 years in all) the Institute of Contemporary Arts has just moved into its first real "home" at 17, Dover-street, Piccadilly, the one-time residence of Lady Hamilton. It was formally opened on December 17 in the presence of the Earl and Countess of Harewood. The establishment of these headquarters does not, however, signify that the Institute has achieved its highest ambition, for members hope that one day the I.C.A. will operate on a comparable scale to the Museum of Modern Art, in New York, which has its own specially designed building and is recognised as the leading organisation for the promotion of the arts.

The new Dover-street premises are to be regarded as an important step towards the ultimate goal. The planning and redecorating of this building have been carried out by Miss Jane Drew and Mr. Maxwell Fry, FF.R.I.B.A., who have undoubtedly created a setting which appears to be admirably suitable for the contemplation of the work of present-day artists. The furnishings and fittings, for which various people are responsible, have been most ingeniously contrived.

In the words of Mr. Herbert Read, president and chairman of the managing committee of the Institute, the aim of the I.C.A. is to make these new premises "a centre where the living arts of painting and sculpture, of architecture and music, of theatre and film, can meet and mutually inspire each other." The Institute wishes "to bring into existence the arts of the future"; to be thought of as "an experimental laboratory where a new vision, a new consciousness, is being evolved."

There is also a desire, apparently, on the part of the Institute, to receive not only patronage but active encouragement from the public. While the public cannot do other than acknowledge the good spirit which is implied in this desire, it may surely be forgiven if it first asks for time in which to catch up in its appreciation of the activities of some members of the Institute.

Inigo Jones and Westminster School

A CORRESPONDENT writes: There has been much controversy in the past as to whether Inigo Jones was the architect of the historic Ashburnham House at Westminster School. Last term Ashburnham House had its roof re-tiled. Investigations then took place in order to find out who was the real designer. "The Elizabethan," the school magazine, states "That the real credit should not go to Inigo Jones is as certain as that the real credit for the building now inhabited by College and Wren's should not go to Sir Christopher Wren. What is yet to be decided is which of Jones's pupils it was who incorporated his master's designs in his own ideas some years after the famous architect's death, and whether the original designs covered more than occasional beadings and decorations."

G.B.S. on Smoke Abatement

A FORGOTTEN speech by George Bernard Shaw in 1911 on the importance of smoke abatement—and of genius—has been found by the National Smoke Abatement Society, and is printed in the winter issue of its magazine "Smokeless Air." It is full of typical Shavian wit and exuberance.

Shaw was speaking to the Coal Smoke Abatement Society of London, urging them to carry on with their work despite the fact that they had no money left. He began by saying he wished to speak about genius—"I know little about smoke, which is a common thing, but everything about genius. I am in that line myself. To the ordinary inefficient mind," he went on, "there is one thing which can be seen over and over again without any importance being attached to it, and that is a smoking chimney." It took men of genius to see it for what it was, and the extent to which the movement would progress would depend on the number of men of genius in the community. "If any of you present will send a cheque for five guineas to the treasurer he will to that extent prove that he is a man of genius."

Shaw described how dirty he found London when he came to it from Ireland. "One has to be an Irishman to understand the antipathy and instinctive dislike that every Irishman has to washing. Anyone going to Ireland will understand the feeling. Personally, I do not think I have really washed myself—except as regards the visible portion of my body like my face and hands—since the time when somebody else did it for me. It is true I have got into the habit of taking a cold bath; but that is not washing. I do it as a stimulant, and I often think I had better have taken to whisky.

"The real secret of healthy cleanliness is to have a clean atmosphere and clean clothes, and until you get rid of smoke you can never have a clean atmosphere," continued Shaw. His advice was to "cut all those persons who have smoky chimneys. We should refuse their invitations to dinner, alleging as the reason: 'I have seen black smoke proceeding from your kitchen chimney.'"

Salary Increases for City's Officials

IN THE face of strong opposition by the whole of the Labour members, Liverpool City Council at its last meeting agreed to increase the salaries of the Engineer and Surveyor (Mr. H. T. Hough) and the City Architect and Housing Director (Dr. Ronald Bradbury) from £3,000 to £3,250, £3,500 and £3,750 during the next three years.

Professional Announcement

MR. F. E. TASKER, L.R.I.B.A., and MR. NORMAN ROYCE, A.R.I.B.A., announce that from February 1, the title of their firm, hitherto designated and known as G. R. Tasker, Sons and Partners, will be altered to Sir Robert Tasker and Partners. They will continue to practise from No. 1, Staple Inn, London, W.C.1, SIR ROBERT INIGO TASKER acting as consultant to the firm.

COMING EVENTS

Saturday, January 20

INSTITUTE OF ECONOMIC ENGINEERING.—Luncheon and A.G.M., St. Ermin's Hotel, Caxton-street, London, S.W.1. 1 p.m.

Wednesday, January 24

ROYAL SOCIETY OF ARTS.—"Dry-rot and Timber," by Dr. W. P. K. Findlay, R.S.A., John Adam-street, Adelphi, W.C.2. 2.30 p.m.

Thursday, January 25

INSTITUTION OF STRUCTURAL ENGINEERS.—Mr. J. W. H. King on "A Fundamental Approach to Prestressed Concrete," 11, Upper Belgrave-street, London, S.W.1. 6 p.m.

INSTITUTE OF WELDING (NORTH LONDON BRANCH).—"Question Night," Polytechnic Institute, Regent-street, W.1. 7.30 p.m.

Friday, January 26

FACULTY OF SURVEYORS OF ENGLAND AND FACULTY OF ARCHITECTS AND SURVEYORS (CENTRAL LONDON BRANCH).—Annual dinner and ball, Savoy Hotel, Strand.

SOUTHERN COUNTIES FEDERATION OF BUILDING TRADES EMPLOYERS.—Luncheon and A.G.M. Connaught Rooms, Great Queen-street, W.C.2. 1 p.m.

INSTITUTION OF STRUCTURAL ENGINEERS (MIDLAND COUNTIES BRANCH).—"Some Aspects of the Construction of a Large Modern Tin-Plate Cold Reduction Plant," by Messrs. A. Sutcliffe and G. E. Garrard. James Watt Memorial Institute, Birmingham. 6 p.m.

FROM "THE BUILDER" OF 1851

Saturday, January 18, 1851

SOMERSET HOUSE TERRACE.—Will you allow me to mention that every time I journey by the "silent highway" I always regret, when passing the *terrace* of Somerset House, that upon each side landing-place, formed of rustic columns and couchant lions, should be permitted to remain *compoed brick chimney-shafts and common red chimney-pots;* which I deplore the more, as by substituting Portland stone chimney-shafts in the form of pedestals, the eyesores can be at once removed at a trifling expense. [From a letter to the Editor.]

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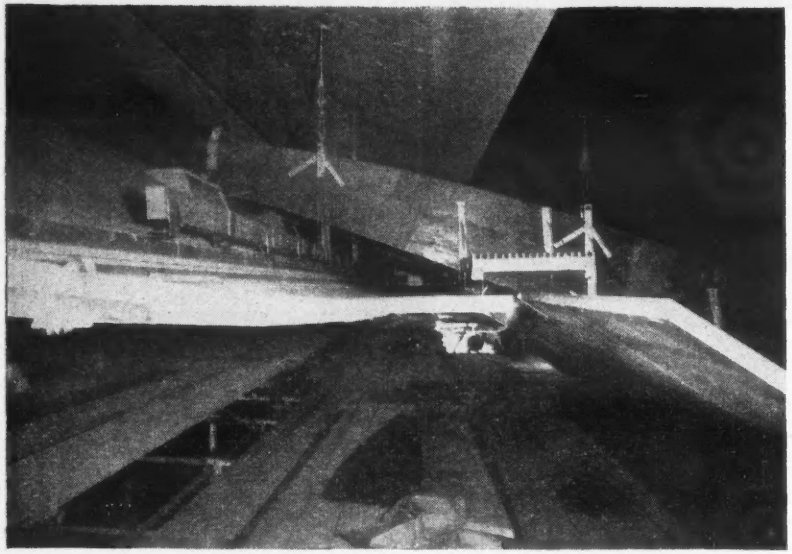
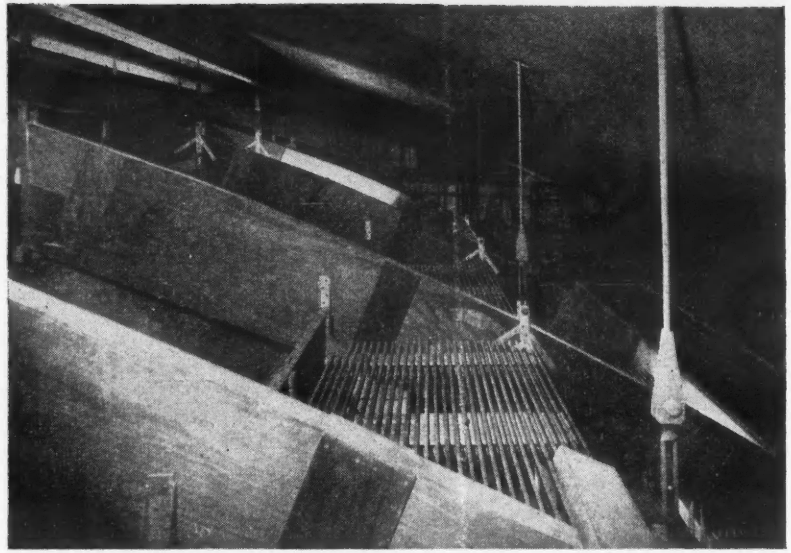
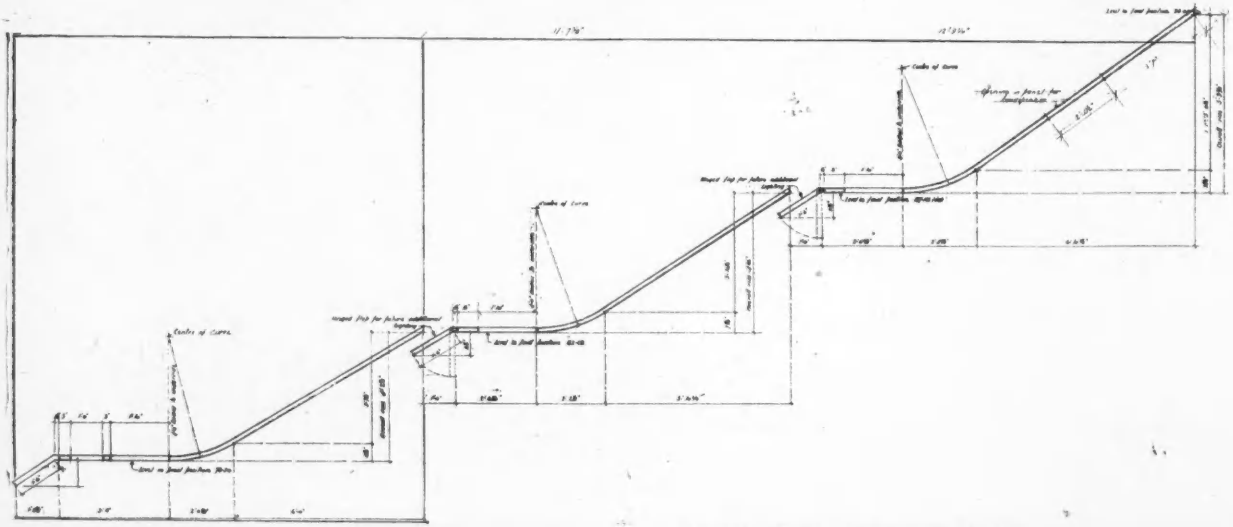


Upper part of canopy, showing arrangement of plywood box girders and transverse beams, circulation gangway and method of suspension to superstructure above

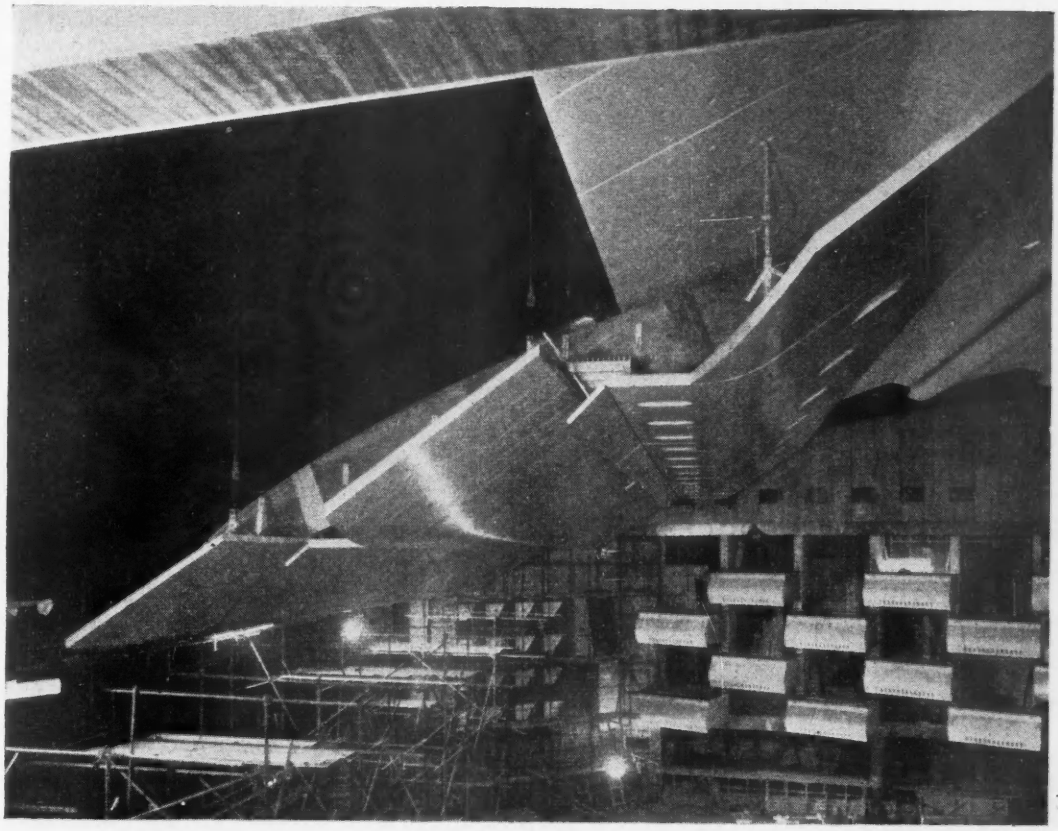


Side view, showing the main plywood box beam girders, transverse beams and method of independent suspension of the stressed skin panels



Longitudinal section through canopy

THE ORCHESTRA CANOPY, ROYAL FESTIVAL HALL



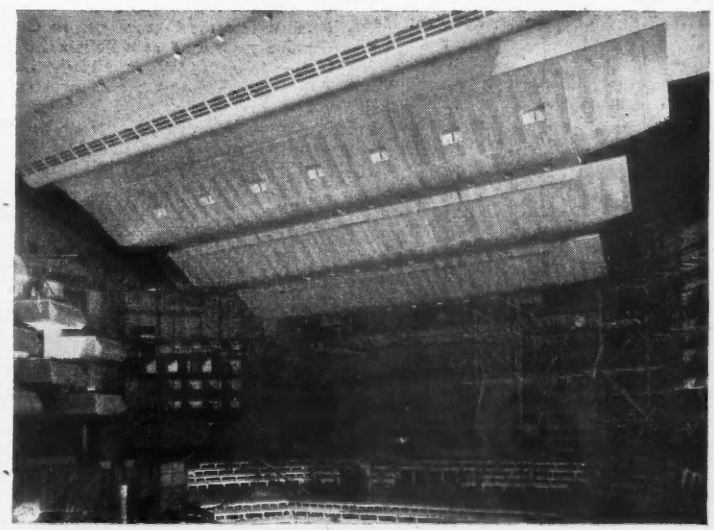
Side view showing openings for loud speakers and lighting units. *Below :* **General view from auditorium**

ORCHESTRA CANOPY, THE ROYAL FESTIVAL HALL

DESIGNED BY THE L.C.C. ARCHITECTS' DIVISION (R. H. MATTHEW, A.R.I.B.A., ARCHITECT)

THE orchestra canopy for the Royal Festival Hall was designed by the L.C.C. Architects' Division (Mr. Robert H. Matthew, A.R.I.B.A., Architect), in conjunction with the Timber Development Association. This huge timber canopy measures some 90 ft. by 40 ft., and incorporates the latest developments in plywood construction.

The curved stressed-skin plywood panels are formed in three separate tiers. They have been constructed in units unequal in area, and are fixed by a system of independent suspension to the main supporting plywood box beam framework above. The stressed-skin plywood panels are approximately 2 in. thick, being formed of two outer skins of plywood, with a laminated infilling in dense timber, the inclusion of the infilling being necessary in order to meet the requirements of the acoustical consultants. The panels are veneered on their under surfaces in the most carefully selected sycamore veneers, in order to effect an extremely high standard of decorative finish.



The framework which supports the panels beneath consists of six principal plywood box girders approximately 40 ft. in length, and 3 ft. 6 in. deep at their maximum cross-section. These are in turn connected to transverse plywood beams which support the panels, which are independently suspended, as mentioned above. In this framework a series of walkways are provided, in order to allow access to the lighting and loudspeaker units which are incorporated in the canopy.

This timber acoustic panel is understood to be the largest orchestra canopy ever to be constructed in this country, and possibly Europe, and it clearly portrays the adaptability of timber as a constructional and decorative material to modern design requirements. The general contractors are Messrs. Holland and Hannen and Cubitts, Ltd.

THE ROYAL GOLD MEDALLIST

Mr. Vincent Harris's Career

MR. VINCENT HARRIS, O.B.E., R.A., F.R.I.B.A. (the award of the Royal Gold Medal to whom is announced on another page), was born in 1879 at Devonport, and educated at Kingsbridge Grammar School. He started his career by being articled to James Harvey, a Plymouth architect, afterwards coming to London where he completed his architectural training at the Royal Academy Schools. For a time he was assistant to the late Leonard Stokes—President of the R.I.B.A. from 1910-1912. Before he entered private practice, Mr. Harris spent a further three years with the late Sir William Emerson and seven years with the London County Council.

While still in his early twenties, Mr. Vincent Harris entered for his first competition—the design for a Town Hall at Torquay—and was placed second. In 1906 he entered for the Wesleyan Central Hall Competition and was placed among the final six. Then followed competitions for the Public Library at Crofton Park, the Town Hall at Devonport, in which he was placed second, and the competition for the Glamorganshire County Hall at Cardiff, which he won in conjunction with Thomas Moodie. He subsequently won the competition for the new Headquarters Fire Station at Cardiff, and was placed fourth in the open international competition for the Point Grey University, Vancouver.

In 1914 his designs were adjudged best in the competition for the new Board of Trade offices on the Embankment, but due to the outbreak of war the scheme was abandoned. In subsequent years he entered for and won each of the competitions for Taunton Science School, Public Hall at Tunbridge Wells and the Memorial Hall at Sheffield, and reached the final stage in the competition for the extension to the Town Hall at Glasgow. In the competition for the Royal Naval Hospital School at Holbrooke—a scheme estimated to cost over £1,000,000—he was placed second.

In 1927 he entered and won the competition for the new City Library and extensions to the Manchester Town Hall, and this scheme is, perhaps, one of his best known. It was completed in 1938. In the early thirties Mr. Harris was responsible for the design of Surrey County Hall, Kingston; Somersetshire County Hall, Taunton; Nottingham County Hall; Leeds Civic Hall; Braintree Town Hall, and the Council Chamber, Essex County Hall.

In 1934 the idea of establishing Government offices on the Embankment was again brought forward and a larger scheme envisaged in the place of the 1914 scheme. A special committee chose Mr. Vincent Harris to design the new buildings, but little progress was made on the buildings until after the second world war; they are now fast reaching completion. In 1937 Mr. Vincent Harris prepared designs for the new Municipal Buildings for the City of Bristol, but it was not possible to embark on building until after the 1939-45 war.

Since the 1914-18 war Mr. Vincent Harris has been engaged on work for Exeter and South-West of England University and extensions to Durham University.

CORRESPONDENCE

Wages of Apprentices

TO THE EDITOR OF *The Builder*.

SIR,—The letter published in your issue of January 12 from the "Father of an Apprentice" is both interesting and sound in some of the points made, but there are matters calling for comment.

It is probable that your correspondent may not have witnessed the results of the Law of Diminishing Returns which, when applied to the employment of apprentices, produces disturbing consequences, particularly when boys indentured turn out to be unsatisfactory (which is not unknown!). The training of apprentices is an expensive duty falling on employers. Taking into consideration all the many factors involved and the cost incurred, it is not generally appreciated by those who have no experience in the matter.

In the building industry, which is probably more competitive than most, there is an economic fractional wage in relation to the craft wage beyond which it would be quite impossible for even the most willing and generous employers to go. Any advance in the existing escalation might well result in a deterioration of the present position, which, surely, cannot be described as wholly satisfactory. While all employers are being encouraged to indenture young boys, it is obvious that there are some firms who are unable, at the present time, to undertake the responsibilities involved, and a general upgrading of apprentices' wage rates might well aggravate this position, in addition to increasing the already uneconomic cost of building to-day.

Your correspondent draws what must be considered as a favourable comparison between the building trades and the electrical trade. There is little doubt that if he were to pursue this form of comparison further, he would not find that the building trade apprentice was receiving a disproportionate wage in relation to apprentices in industry generally. On the contrary, taken by and large, he enjoys rather enhanced conditions of employment, particularly in view of the skill and experience which he normally gains during his indentures.

However, the suggestion made about monetary grants to apprentices for successful work on the job, at school, or in examinations is to be most strongly commended. Grants of this kind are an excellent incentive to any young boy learning a trade and should certainly help him towards the acquisition of technical books and tools of good quality, both of which are indispensable to a first-class craftsman.

APPRENTICE MASTER.

The Q.S. and Local and Nationalised Government Services

TO THE EDITOR OF *The Builder*.

SIR,—Your correspondent, Mr. C. R. Vinycomb (December 29), raises a pertinent question. The status of the Quantity Surveyor in the local and national government departments is subordinate to a degree which hinders the proper performance of his duties. The economic aspect of building is rapidly becoming the most important consideration, and the authorities would do well to avail themselves directly of the advice of their experts in this field.

However, no-one outside the profession is likely to remedy the defect, and the Q.S. must press his own suit if he does not wish to remain a mere amanuensis.

L. STOCKDALE.

77, Devon-crescent,
Holly Hall, Dudley.

OBITUARY

William Tweedy, F.R.I.B.A.

The death has occurred, in a nursing home, at the age of 79, of Mr. William Tweedy, F.R.I.B.A., of Newcastle-on-Tyne. Mr. Tweedy was one of the founders of the firm of Marshall and Tweedy, of Blackett-street, Newcastle. Among buildings designed by the firm are the Commercial Union building, Northumberland-street, Newcastle; the Phoenix Assurance building in Collingwood-street, Newcastle; Grainger House, Newcastle; the Jesmond Playhouse; and the large stores in Northumberland-street, Newcastle, belonging to Fenwicks, Ltd.

Mr. Tweedy had studied architecture under the late Mr. Watson, of Durham, and took the first prize for sketches and measured drawing in 1892, offered by the Northern Architectural Association.

J. T. Blackwell, L.R.I.B.A.

The death was recently announced of Mr. John Thomas Blackwell, L.R.I.B.A. (Retired), senior partner in the firm of Messrs. Blackwell and Storry, architects, of Kettering, in Northamptonshire. He was 87. Mr. Blackwell was responsible for the design of and alterations to many of Kettering's buildings and had been practising architecture in the town for over half a century. He had been a member of the architects' panel of the Council for the Preservation of Rural England. He went on the retired list in 1943.

T. Millner Sapcote, P.I.O.B.

We regret to record the death of Mr. T. Millner Sapcote, President of the Institute of Builders. He was 50.

Mr. P. J. Spencer (Secretary of the Institute) writes: The name of Sapcote has been associated with the Institute ever since its incorporation about seventy years ago. In taking an active interest in the work and purposes of the Institute, the late Mr. T. Millner Sapcote was following a family tradition; his uncle, Mr. S. Guy Sapcote, served for many years as a member of the Council and was President 1927/28.

Mr. T. Millner Sapcote was admitted to the Institute twenty years ago. As a Member he served on the Council and its Committees for five years, and as a Fellow for ten—the last seven as an officer, and the last two as President. He was a sick man (and knew it) when he accepted the presidential office, but—as he then said—he loved the Institute; and this he showed in years of devoted service particularly to the educational and examination aspects of its work.

At the funeral at Hastings on January 15, the London Master Builders' Association was represented by Mr. D. C. Roberts, and Central Area No. 3 (of which Mr. Sapcote was Immediate Past-Chairman) by Messrs. B. L. Morgan, R. H. Willard and C. J. Blyth.

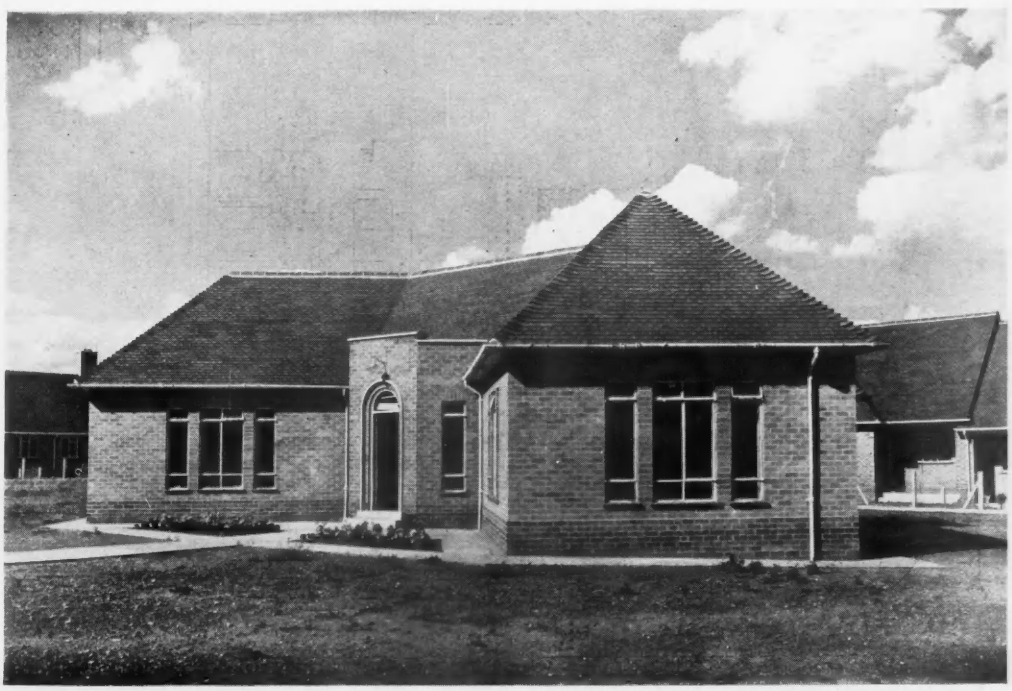
Birkenhead Architectural Department

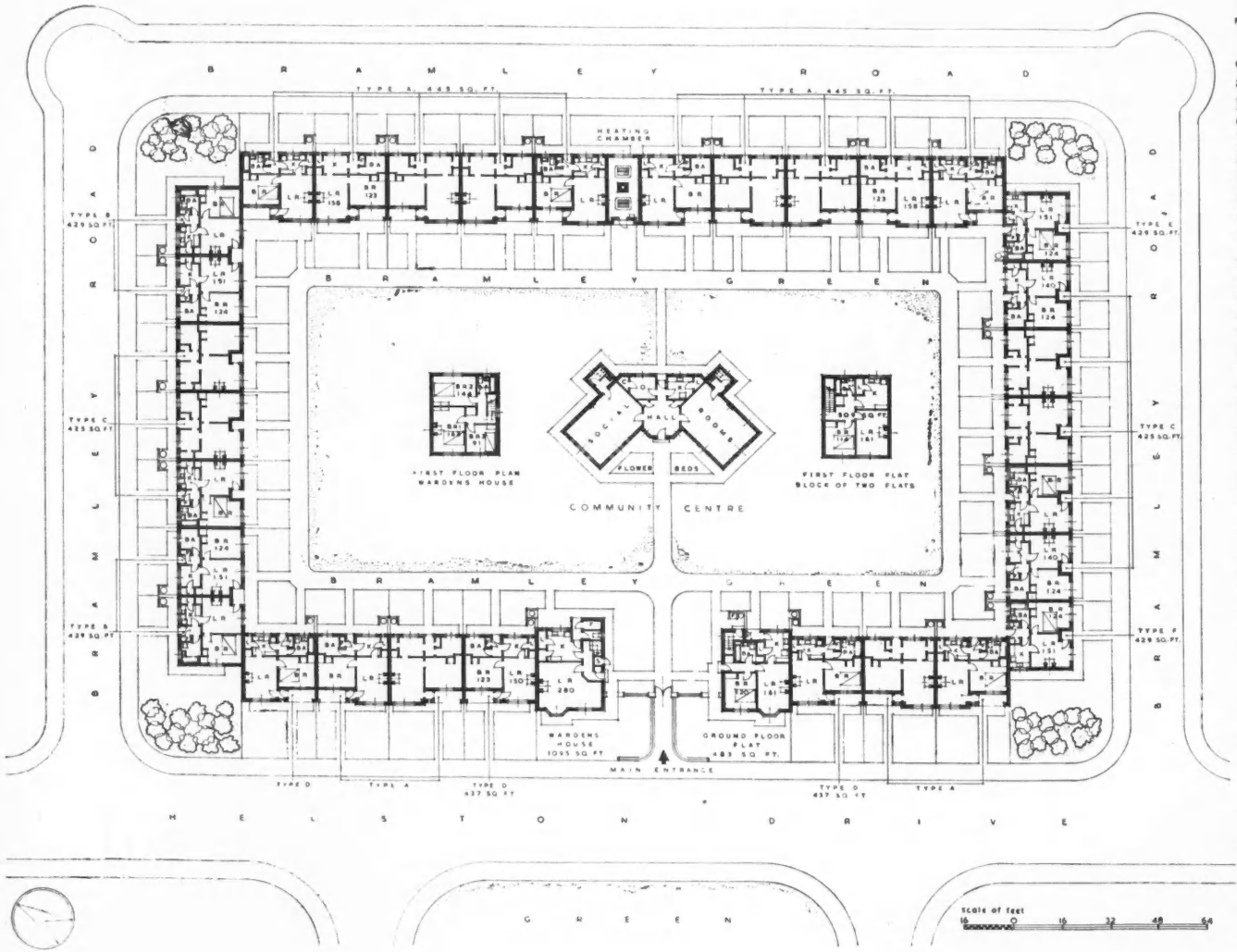
THE Architectural Department, Birkenhead County Borough, is now separated from the Borough Engineer's Department, and is under the direction of Mr. T. A. Brittain, F.R.I.B.A., Dip.Arch., Borough Architect, at No. 1, Mortimer-street, Birkenhead.

Main entrance. *Below :* **Community building**

ELDERLY PEOPLE'S DWELLINGS for the CITY of NOTTINGHAM

C. A. PILKINGTON, L.R.I.B.A., HOUSING ARCHITECT





THIS scheme, situated on the Broxtowe and Strelley estate, comprises 31 bungalows, 2 flats and a warden's house. The dwellings are planned round a green, with a small community building in the centre. Each bungalow contains living-room and porch having a southerly aspect, bedroom (with fitted wardrobe), kitchen (with sink and double drainer boards, dresser, gas cooker and wash boiler), larder, fuel store and combined bathroom and w.c. The bath is fitted with hand grips and is sunk slightly to allow of easy access. Domestic hot water is supplied from a central heating chamber through a calorifier in each dwelling, and background heating is provided to the living-rooms. The boilers are gas fired and the system is fully automatic. There is an open fire in the living-room and portable electric fires with power plugs are provided in the living-room, bedroom and kitchen. Each dwelling has a small private garden, while the Green, flower beds and shrubberies are maintained by the local authority.

When the development of the estate is completed the elderly people's dwellings will be close to the shops and the main community centre, which will be served by buses. There will be three churches of different denominations within easy walking distance.

The general contractors were Messrs. J. W. Stamp and Co., of Nottingham, and the following sub-contractors were engaged :—

Heating and plumbing, H. Hilton (Nottm.), Ltd.; roof tiling, Buxton Dawson, Ltd.; "Rubentex" flooring, R. K. McLean and Co.; plastering, A. E. Lord and Sons, Ltd.; electrical work, E. A. Harvey, Ltd.; painting and decorating, F. Labbett and Sons; wrot-iron railings, Lewis and Grundy, Ltd.; turfing, trees and shrubs, Nottingham Corp. Parks Dept. The external facing bricks are golden "Nutec" manufactured by the Nottingham Patent Brick Co., Ltd., and the roofing tiles are Acme Sandstorm "Tudor" tiles manufactured by Messrs. G. H. Downing, Ltd., Chesterton.

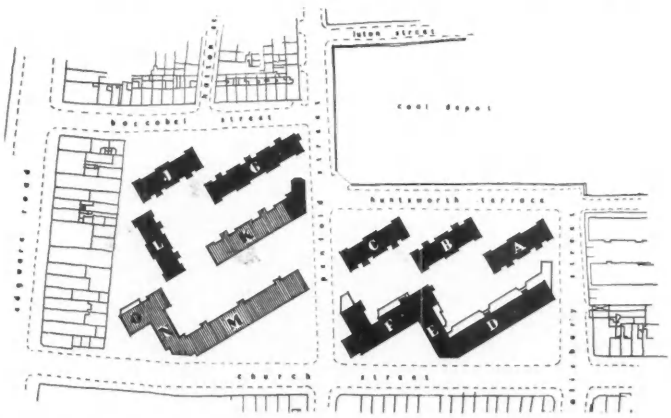
Typical elevation to Green

ELDERLY PEOPLE'S DWELLINGS, NOTTINGHAM : Elevations to Helston-drive

The main block to Church-street. Note the angle of the building and the frontage line, and the varying heights of the separate blocks. *Below :* **The block plan**

CHURCH STREET HOUSING SCHEME, ST. MARYLEBONE

EASTON & ROBERTSON, FF.R.I.B.A., ARCHITECTS

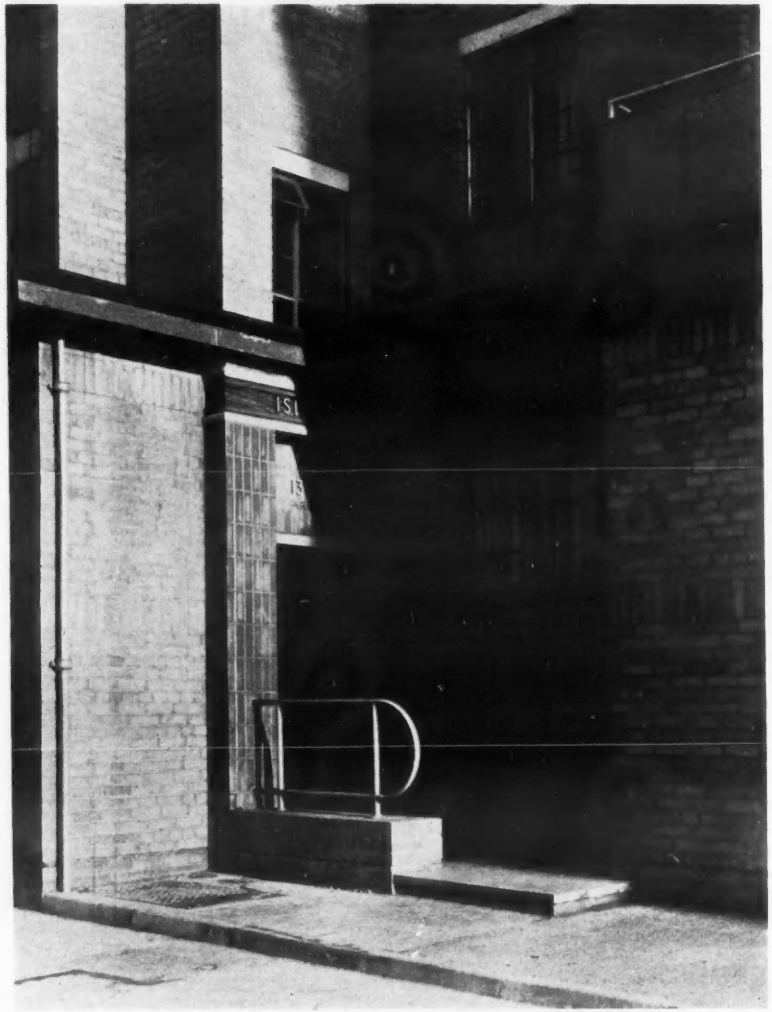


THIS scheme for 14 shops and 140 dwellings in eight blocks is a first instalment of a development for two sites known as the Huntsworth-terrace and Boscobel-street sites. Only the rear portion of the latter site is at present built over. The most noticeable feature of the planning is the setting of the blocks at an angle to the roadways in order to bring a sense of distance into the outlook from the windows of the flats, to break the monotonous rhythm of the neighbourhood, to keep the buildings as far as possible from overlooking the main traffic, and, most important, to provide a maximum of east and west exposure. This arrangement of the blocks, giving extensive views to the flats, also provides interesting views from the ground in all directions; it has made the layout of the spaces between the buildings less formal and more homely in character, the idea being to avoid the customary large unbroken areas of macadam paving generally associated with schemes of this kind. The setting back of the frontages also enables shoppers to leave prams, etc., in comparative security away from street traffic.

Another feature of the scheme is the number of flats with three or four bedrooms, and the provision of a third bedroom large enough for two persons. There are also seven blocks of maisonettes which were planned in an effort to provide the amenities of a house on a high-density London site. On the ground floor of the maisonette blocks a number of small flats have been planned for elderly people. The dwellings are serviced with constant hot water from a

A back view of one of the maisonette blocks looking north. The bricks are Uxbridge flints

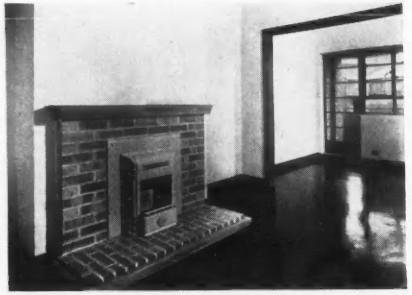
A maisonette block, showing the common staircases and living-room balconies. The balcony fronts are finished blue grey with pale yellow tubular supports



A typical flat kitchen. Walls are painted pale yellow, the fittings off-white and the floors are dark-red tiled

Left: Typical entrance to one of the maisonette blocks

Right: A living-room fireplace, showing the dining recess and balcony on right



centrally placed boiler house which serves both sites. There are two fully equipped communal laundries which have been planned at ground level, with dayrooms adjoining.

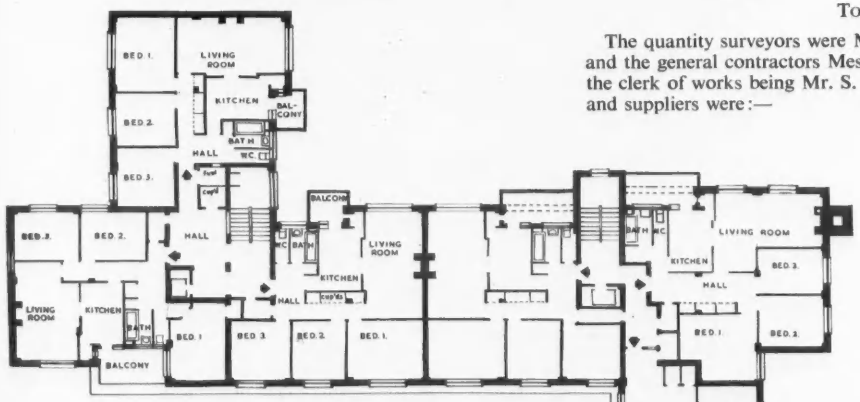
All the buildings are fitted with ample cupboards in the hallways. This arrangement was decided upon in order to allow the maximum flexibility in the bedrooms for furnishing. The construction is a steel frame with brick external walls, asphalt roofs, and standard metal windows. The finishings and equipment are of necessity reduced to the simplest terms in order to provide interiors of maximum superficial area, but the colour scheme for the whole has been carefully worked out with a view to enlivening the otherwise simple treatment.

The gross area of the site is 4.9 acres, and the types of dwellings are as follows:—

Maisonettes:	5 room	... ...	13
	4 room	... ...	43
Flats:	4 room	... ...	40
	3 room	... ...	32
	2 room	... ...	12
	TOTAL	... ...	140

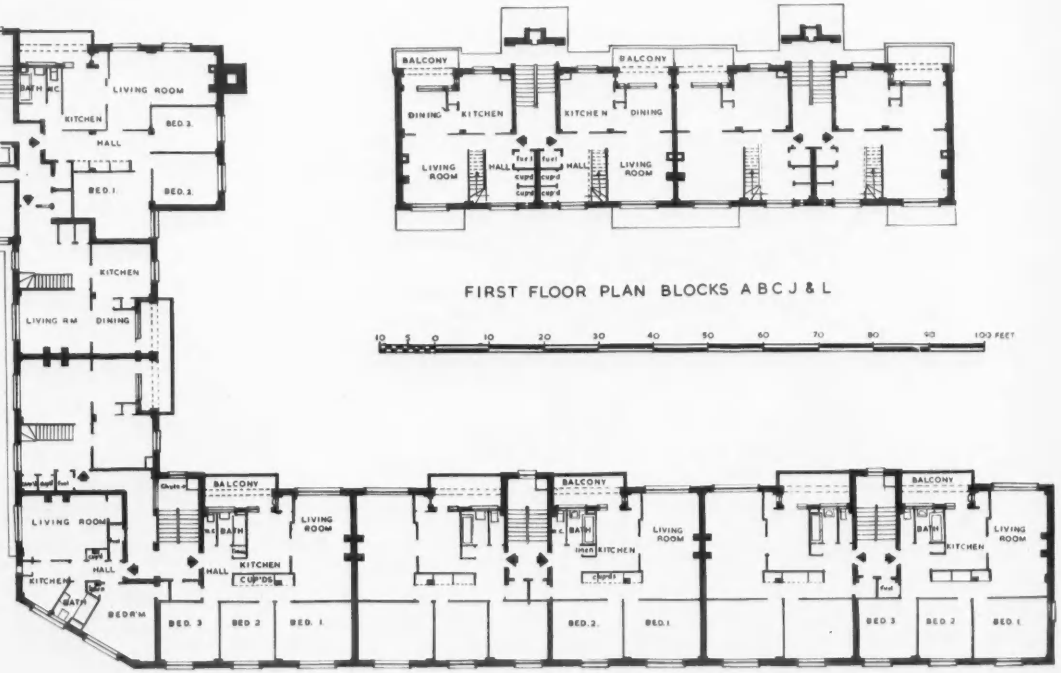
The quantity surveyors were Messrs. Crosher and James, and the general contractors Messrs. Prestige and Co., Ltd., the clerk of works being Mr. S. F. Allen. Sub-contractors and suppliers were:—

Ash hoist: George Johnson, Ltd.; asphalt roofing, flooring, and tanking to basements, Val de Travers Asphalte Co.; metal work, balcony and stair balustrade, George Wright (London), Ltd.; cement glaze wall finish, Robb's Cement Enamel Finishes, Ltd.; constructional steel, Redpath Brown and Co., Ltd.; electrical installation, Matthew Hall and Co., Ltd.; kitchen fittings, Peerless Built-in Furniture, Ltd.; flush doors, D. Burkle and Son, Ltd.; structural floors and staircases, Kleine Flooring Co., Ltd.; hot water supplies, G. N. Haden and Son, Ltd.; ironmongery, Comyn Ching and Co., Ltd.; passenger lifts, Keighley Lifts, Ltd.; steel reinforcements to basements, British Reinforced Concrete Engineering Co., Ltd.; sanitary fittings, John Bolding and Sons, Ltd.; steel windows and doors, Crittall Manufacturing Co., Ltd.; wall tiling, W. B. Simpson and Sons, Ltd.; laundry equipment, Thomas Bradford and Co.; water softening plant, The Permutit Co., Ltd.; steel storage tanks, Horseley Bridge and Thomas Piggott, Ltd.; reconstructed stone, Croft Granite, Brick and Concrete Co.; slabbed tile wall panels for electric fires, A. Bleakley and Co.; bricks (facing), Uxbridge Flint Brick Co., Ltd.; escape stairs, F. A. Norris and Co., Ltd.; composition flooring, Semtex, Ltd.; absorbent plastering, S. Towers, Ltd.; lettering, The Lettering Centre; and special cement floors to shops, Prodorite, Ltd.



FIRST FLOOR PLAN BLOCK DEF

FIRST FLOOR PLAN BLOCKS A B C J & L



CHURCH STREET HOUSING SCHEME, ST. MARYLEBONE

EASTON AND ROBERTSON, ARCHITECTS

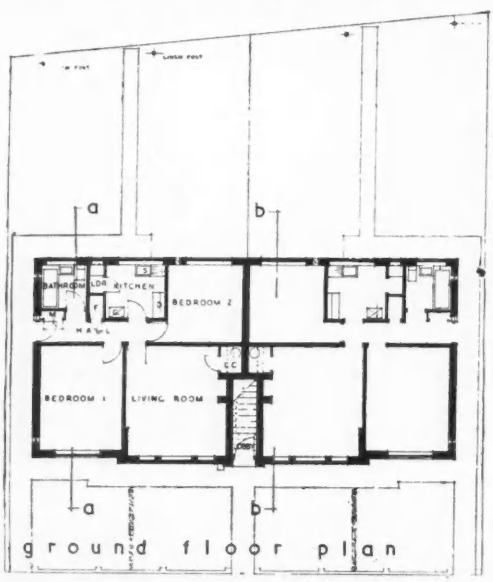
FOUR FLATS AT HARWICH

ALLEN W. VINCENT, BORO' ARCHITECT
D. R. FREEMAN, SENIOR ASSISTANT

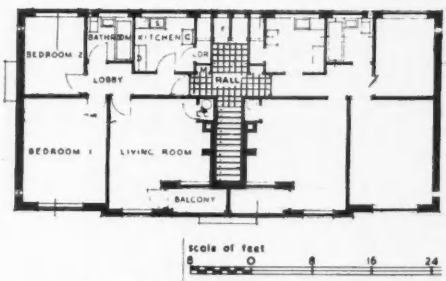
IN order to make use of a small plot of land situated in a densely populated area, the Harwich Corporation instructed the Borough Architect to produce plans of a reasonably priced block of flats, making the fullest use of the restricted space available, and the accompanying plans and photograph illustrate the block of four two-bedroomed flats which now occupy the site. The general contractors were Messrs. Vincent and Barren, of Dovercourt, whose tender of £3,826 was the lowest of four. Savings made during the progress of the work have shown the final costs to be nearly £200 below the contract figure. The quantity surveyors are Messrs. Parmenter Caston and Porritt.

A single staircase of precast concrete steps gives access to the two first-floor flats, landing to a small common hall. Each of the ground-floor flats has an area of 644 sq. ft., and those on the first floor are 676 sq. ft., including the staircase and landing. The construction is traditional. The 11-in. brick external walls have a 2-in. unventilated cavity and are faced with rusticated flettons. " Redland " plain concrete tiles on battens and felt cover the roof, which is conventionally timber framed, and the suspended first floor is of 6-in. " Bison " hollow concrete beams. The ground floor is a 6-in. waterproofed concrete raft, reinforced with 471 " Wireweld " fabric, the upper floor finishings being boards on battens in the living-rooms and bedrooms, and " Liotex " jointless flooring in the kitchens and bathrooms. " Liotex " flooring is used throughout the ground floors. Hot water is provided by a copper back boiler connected to a combination tank. The sub-contractors were :

Suspended flooring, Concrete, Ltd. ; roof tiling, Wright and Co., Ltd. ; electrical installation, E. L. Podd ; joinery, Rippers, Ltd., and H. E. Taylor and Co., Ltd. ; fireplaces, Thos. Moy and Co., Ltd. ; floor finishings, " Liotex " Asbestos Flooring Co. ; sanitary fittings, B. Finch and Co., Ltd., Smyth Bros., Ltd., and Grey and Marten and Co., Ltd.



ground floor plan



first floor plan

1951

FOUR KING'S MASTERS—1

A Question of Identity

By J. G. NOPPEN, F.S.A.

THE four masters forming the subject of this article appear in certain of the Chancery rolls and works accounts for the period 1249 to 1258 inclusive. They are John *de Sancto Albano;* John *le Sentori,* or *Seynter;* John *apud Sanctum Albanum;* and John *de Sancto Omero,* or *Odomero.* The writings which mention them were, without doubt, clear to the people of the time; but they are puzzling to us. They leave uncertain not only the trade of each master, but the number of individuals represented.

The late W. R. Lethaby thought that John of St. Omer was a painter, and identical with John *apud* St. Albans.[1] He held John *le Sentori* to be the same man.[2] The only record then known of John of St. Albans described him as *sculptor imaginum regis,* and this led Lethaby to the view that he was probably a stone-carver.[3] But shortly after Lethaby's death, a further writ about John of St. Albans was found in the Close Roll, which enabled me to show that he was a metal-worker.[4] I also hinted that he might be identical with John of St. Omer, and Professor Tristram, in his fine book on *English Mediaeval Painting in the Thirteenth Century,* has, on grounds of his own, reached the same conclusion. He deals with the matter particularly in Appendix No. 1; but we shall return to this point later.

I have now assembled, and very carefully studied, all the evidence that I can find, and, in its light, all the views so far published (including my own) seem to call for further consideration. I propose, therefore (taking each supposed individual in turn) to give the result of my investigations.

John of St. Albans

In 1257, the king ordered the keepers of his wardrobe to issue to John of St. Albans, "sculptor of the king's images," a robe.[5] This was on December 22. On May 2, 1258, the order was given for John to have another robe. He was not then described as above; but it was noted that he had "well served the king about a candlestick."[6] Nothing else about this master has so far come to light.

The fact that John worked on a candlestick points to his having been a goldsmith, and, as such, he might well, additionally, be the sculptor of images. The king had numerous images of both silver and gold made for him, and some were of gold adorned with jewels. Such precious works would doubtless be much talked of, and there need be no surprise that a man who had made some of the more valuable among them should be styled in a writ "sculptor of the king's images." Moreover, the term *sculptor* is used, about this time, by Matthew Paris, who thus describes that famous goldsmith, Master Walter of Colchester, the maker of the shrine of St. Thomas Becket. But never, at this period, is the term *sculptor* used in connection with a carver in wood or stone.

Epithets often seem to have been meant as compliments. John had, I suppose, wrought both images and candlestick to the king's perfect satisfaction, and so, when making out the writs, the scribe took note of the fact. The same thing was done in the case of Master Jordan, king's carpenter, who, some years earlier, came to be described as Jordan, the king's catapult-maker, after he had built a famous war-engine.[7] They were not official titles, such as chamberlain or escheator. I am, therefore, convinced that Master John of St. Albans, goldsmith, was a separate personality from the other three.

John le Sentori, or Seynter

This master is found in the Close Rolls for 1250, 1253 and 1255, and in the accounts for the period 1249-52. His first appearance in the Rolls is on February 11, 1250, when Edward of Westminster was ordered to "have made by Master John *le Seynt,* from the metal that remains from the great bell of Westminster, four bells for placing in the chapel of Windsor Castle."[8] Two of the bells were to be like two in St. Stephen's chapel at Westminster, and the other two in accordance with instructions which the subprior of Westminster would give on the king's behalf. On April 6, 1253, Master John *le Seinter* was granted a suitably furred robe[9]; and on February 26, 1255, John *le Seynter,* together with a glazier, a plumber and a carpenter, was granted another robe.[10]

Turning to the accounts, we find that between the years 1249 and 1252, both inclusive, John was paid a total of £114 12s. 6d., in sums ranging from £20 down to 10 marks.[11] This was a very big sum in the thirteenth century. The first payment is made in 1249, and is of 10 marks; but we are not told its purpose. It is followed by a memorandum that John has in his charge five hundred of metal of which he has delivered a hundred and a half to Robert de Setindon, through the lord Edward, and so must yet answer for three and a half hundred. In 1251, Master John and Master Peter the painter jointly receive £20, but what it was for, or how it was shared, is not recorded. In 1252, John is paid sums of £20, 20 marks and £10 for uses not stated, 25 marks for refining metal and other things (*ad metallum purgandum et ad alia*), £17 19s. 2d. to complete payment for a bell, and £10 for coal and firewood (*ad carbonem et buscham*).

The King's Bells

In May, 1247, the Sheriff of Devon was ordered to buy 4,000 lb. of tin (*iiij miliaria staminis*) and carry them to Westminster for the King's works.[12] At this time, the massive belfry which used to stand northwards of the abbey church, was being built.[13] On September 29, 1249, the same sheriff was commanded to buy a further 4,000 lb., and carry it to Westminster, "for the king's great bell and other works."[14] In the following year, Edward of Westminster acknowledged having received 3,000 lb. of tin *ad magnam campanam,* which had been delivered by Walter of Bath, Sheriff of Devon, on October 15, 1249.[15] Edward was a keeper of the king's works, and one of the king's more trusted clerks. At this time, he also held the office of Chancellor of the Exchequer, and was treasurer of a new "Exchequer of Works," established by King Henry to handle funds for his Westminster works. I have dealt with him at some length in a paper published in 1949.[16]

In July, 1250, Edward was instructed to have another bell made "greater than those he had got made last year" (*majorem hiis quas fieri fecit anno preterito*), and if he had not enough metal in his care, he was to buy what was short, as the king did not wish any old bells to be broken up to provide it.[17] In November, 1252, Edward was told to hang "the great new bell," and to see that it was done before he left London.[18] This may have been the bell for which, in the same year, Master John *le Sentori* received £17 19s. 2d. to complete payment.

It seems that there was a royal foundry at Westminster, and that John was the master in active charge. The epithets *le sentori* and *le seynter* clearly mean a bell-founder. That was undoubtedly John's trade, and we may believe that Westminster's famous bells were his work. Matthew Paris has left us a picture of them, and from it the late W. R. Lethaby made a delightful little drawing, which he reproduced in *Westminster Abbey and the King's Craftsmen* (Fig. 40 on p. 115 of that book). The size of the great bell is emphasised by making it almost as tall as the church. The king was proud of his bells.

Master John was not the only bell-founder who worked for the king. In 1252, Master Hugh *le seinter* was commanded to make three bells for the church of Dover Castle.[19] He does not appear in the Westminster accounts, and I do not think he worked there. I have found no other bell-founders named in the documents, and there appear to be no grounds for the identification of Master John *le Sentori* with any other master.

John apud Sanctum Albanum

The lectern which, in 1249, John of St. Omer was ordered to get made like that at St. Albans, or better if possible, is first mentioned in the accounts for the year 1253. The account comprises two separate documents, the shorter referring to a period of 11 weeks before Easter, and the longer to 32 weeks following that feast.[20] It may be assumed to cover the whole of the time in the course of that year, during which men were regularly at work. The shorter document is properly headed, *Compotus diversarum operacionum Ecclesie, Capituli, Berefridi et Curie Westmonasterii,* etc. After details of the period covered and the saints' days to be observed, the account is divided into three parts: the first gives payments in respect of the church and chapter house; the second those of the belfry, and the third those of the court (i.e., palace). The longer account has no heading; but is systematically made

[1] *Westm. Abbey and King's Craftsmen,* pp. 154-5 and 257.
[2] Ibid, pp. 154-5.
[3] Ibid, p. 245.
[4] See *The Builder,* August 17, 1949, and *Royal Westm. its Sculpture and Painting,* pp. 101-2.
[5] Close Roll 42 Henry III, p. 179.
[6] Close Roll 42 Henry III, p. 217.
[7] We carry on the tradition when we speak of Evans of the *Broke,* or Fegan of the *Jervis Bay.* They were topical epithets.
[8] Close Roll 34 Henry III, p. 264.
[9] Close Roll 37 Henry III, p. 340.
[10] Close Roll 39 Henry III, p. 47.
[11] E101/466/29. Exch. Accts. at P.R.O. I give the various sums in pounds, or marks, as in the account; the mark=13s. 4d.
[12] Lib. Roll 31 Henry III, p. 125.
[13] E101/466/30 at the P.R.O. has a section devoted to the belfry. In 1253 it was obviously nearly finished.
[14] Lib. Roll 33 Henry III, p. 253.
[15] K.R. Mem. Roll 25 (unprinted).
[16] See *Antiquaries' Journal* Jan.-April, 1949.
[17] Close Roll 34 Henry III, p. 304.
[18] Close Roll 37 Henry III, p. 280.
[19] Lib. Roll 36 Henry III, p. 32.
[20] E101/466/30 and E101/467/1 at the P.R.O.

up week by week, and mentions the saints' days.

Master John is named once in the shorter account. The first item is the total sum paid to the stone-carvers, marble-workers, stone-layers, carpenters, polishers, smiths and glaziers. The next reads: *In stipendio magistri Johannis cum carpentario et serviente apud Sanctum Albanum lxxiiijs.* Later in the account, among the purchases, we find, *In meremio ad lectrinum apud Sanctum Albanum, iiijs. iiijd.* In the account for work at the court, Master Peter of Spain, the painter, receives lxiiijs. for wages, and ten unnamed men are "painting above the table in the great hall." They are probably under Peter's supervision.

The Longer Account

In the account for the first week after Easter, the section which states the payments made for wages begins, *In stipendiis xxxix alb' ciss' xiiij marmor' xx cubitor' xxxij carpent' cum Johanni apud Sanctum Albanum iij pictor'*, and so on. The sum paid is given at the end, the separate amounts disbursed to the men of the several trades are not shown. The trades fall into the same order in each weekly account, and when Master Peter *pictor* appears, he follows John; but, as we have seen, the painter was working at Westminster. He was not with John at St. Albans.

John's name occurs in 27 of the 32 weeks covered by the longer account, and the wording of the entries betrays slight variations. In the account for the second week we find, *. . . carpent' cum J. et suo socio apud Sanctum Albanum duobus pictor' . . .* and in that of the third week, *. . . cum J. et sociis apud S. A. Pet' pictor . . .*; but Peter is here not because he was working with John; but because the painters, whether named or unnamed, invariably followed John in the account. In some weeks we read, John *cum carpent' et serviente*, and the lectern is actually mentioned in only one week: *Joh' apud S. Alban' circa lectrinam cu carpent' et serviente.* John is called *magister* in only three accounts: those for the 18th and the last two weeks. There is a damaged fragment of an account,[21] which cannot be certainly dated; but may be 1254, in which John is once mentioned. The item reads, *Mag'ro Johanni apud S. Alban' vijs. iiijd.*

The lectern remained at St. Albans until 1256, when Edward of Westminster was ordered to have it safely packed in boxes and sent to its destination.[22] It must have been delayed, and, indeed, would hardly have been constantly in hand between 1249 and 1253. Nevertheless, assuming that it was similar to, or possibly a little superior to the one at St. Albans, which so delighted the king, we may believe that it was an elegant piece of furniture.

It was to be made of wood. The writ is quite clear: colours are to be provided for the painting in the wardrobe, and timber for the lectern. It would be made by workmen similar to those who wrought the royal chairs of State and bishops' thrones. When finished it would be painted and gilded. The Master John of the account for 1253 was obviously the man in charge of the job, and all definite reference to him has been quoted. The question of his trade is a difficult one, and final consideration of it must wait until Master John of St. Omer has been discussed.

(To be concluded.)

[21] E101/467/4 at the P.R.O.
[22] C.R. 40 Henry III, p. 416. I mention this in the *Antiquaries' Journal* April-July, 1949.

COMPETITION NEWS

City Halls and Offices, Nairobi

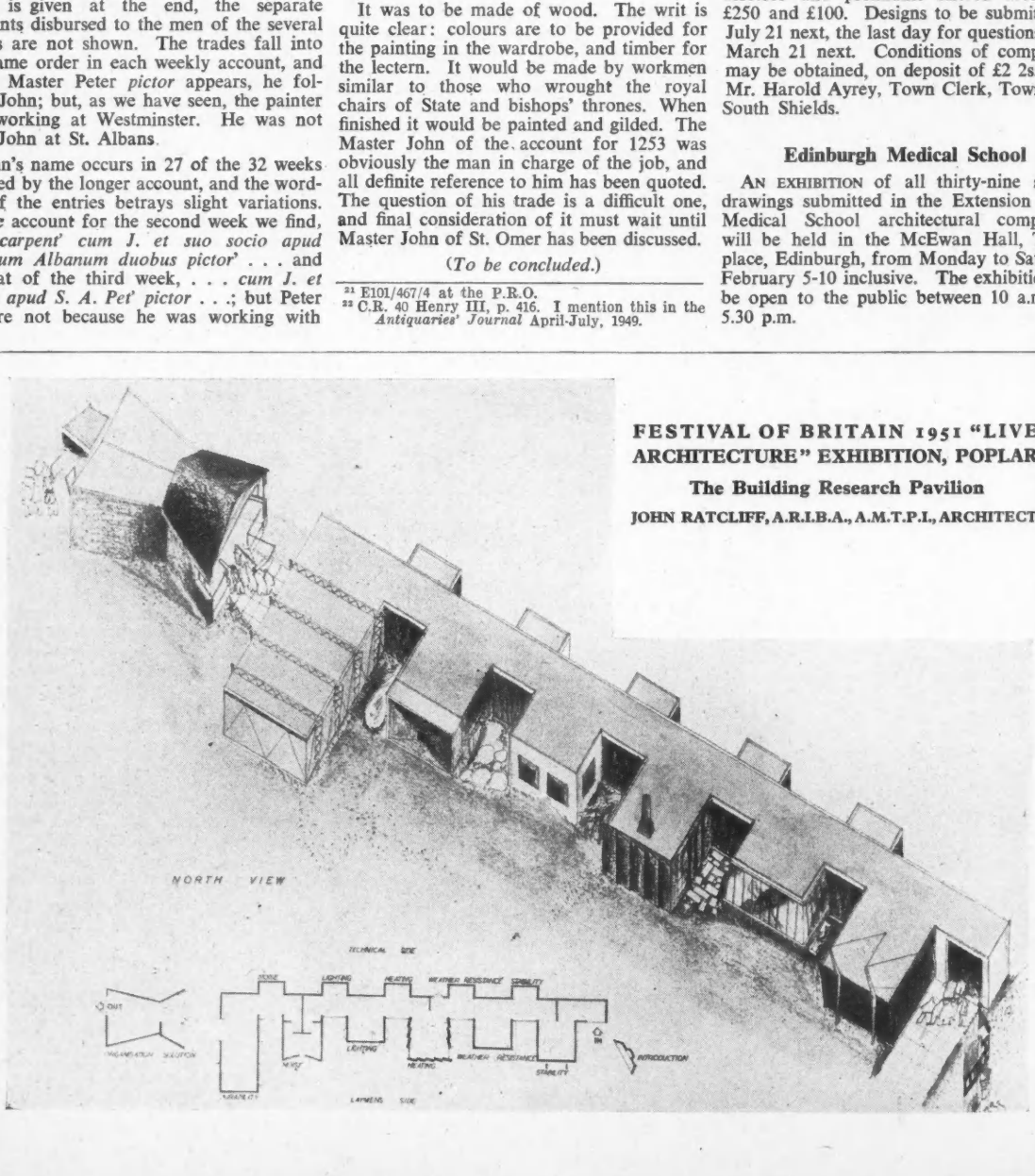
THE ASSESSOR, Mr. E. W. Thornton-White, F.R.I.B.A., in the competition for New City Halls and Offices, Nairobi, Kenya, has now made the following award, which has been accepted by the Municipal Council: 1st (£550 premium): C. A. Levick, P. H. Connell and L. T. Croft, of Durban. 2nd (£450 premium): A. Ball, A.R.I.B.A., of 20, South Island-place, Clapham, London, S.W.9. 3rd (£250 premium): R. H. Cobb, H. D. Archer and R. Q. Scammell, of Nairobi.

Marine and Technical College, South Shields

SOUTH SHIELDS C.B. invite architects of British nationality to submit designs in open competition for the proposed Marine and Technical College buildings to be erected at South Shields. Mr. S. W. Milburn, M.B.E., M.C., T.D., F.R.I.B.A., has been appointed assessor and premiums offered are: £500, £250 and £100. Designs to be submitted by July 21 next, the last day for questions being March 21 next. Conditions of competition may be obtained, on deposit of £2 2s., from Mr. Harold Ayrey, Town Clerk, Town Hall, South Shields.

Edinburgh Medical School

AN EXHIBITION of all thirty-nine sets of drawings submitted in the Extension to the Medical School architectural competition will be held in the McEwan Hall, Teviot-place, Edinburgh, from Monday to Saturday, February 5-10 inclusive. The exhibition will be open to the public between 10 a.m. and 5.30 p.m.



FESTIVAL OF BRITAIN 1951 "LIVE ARCHITECTURE" EXHIBITION, POPLAR

The Building Research Pavilion

JOHN RATCLIFF, A.R.I.B.A., A.M.T.P.I., ARCHITECT

HOSPITAL PLANNING

Symposium at the Architectural Association

A SUMMARY of the communications and discussion at the Post-graduate Symposium on Hospital Planning—held at the Architectural Association on December 6—has now been issued from 34-36, Bedford-square, W.C. The symposium was presided over by Mr. S. E. T. Cusdin, A.R.I.B.A., A.A.Dipl. (President), who, in opening proceedings, after quoting Dr. René Sand's dictum that "The hospital's foremost aim, to which everything must be subordinated, is the cure and well-being of the patient, which includes a sincere regard for his person," added: "The planning of a hospital is not an end in itself. As far as the individual patient is concerned, the hospital is as good or as bad as the staff—doctors, nurses and administrators—make it. That is not to say, of course, that the planning should not be as good as it can be. To improve the standards in this respect and to assist each other in reconciling higher standards with the compelling factor of economy is the reason for our meeting to-day." Following are extracts from the various communications:—

1.—Planning for Internal Circulation and Future Development of Treatment Methods

In presenting this communication, MR. MICHAEL POWERS, A.A.Dipl., said that the object of his remarks was to find out, if that were possible, how to avoid the tragedy of designing hospitals which became out of date, in many cases, even before the buildings were finished. The rapid progress of medical science was constantly affecting the method of treating diseases, and we must aim at a type of planning which allowed for extension and alteration without causing the inconvenience normally associated with "having the builders in," which it was particularly important to avoid in hospitals. His proposals were the result of the research and thought which his partners and he had given to this problem during the last few years, and they related only to an acute general hospital. They involved the acceptance of several hypotheses, including (i) a multi-storey building, and (ii) twelve ward units, each containing 24 beds.

The speaker continued: "The ward units are placed in two six-storey blocks, put end to end, the main thoroughfares consisting of two vertical shafts linked horizontally at their bases. The ward block forms the principal single element of the hospital and dictates the pattern to which the other elements must be related. The specialist departments—a minimum of six, namely, out-patient, casualty, radiology, dispensary, physiotherapy and pathology—must lend themselves more readily than other parts of the building to extension or alteration, because it is in treatment methods that technical developments occur so quickly and unpredictably. With the exception of the casualty and out-patient departments, they must be easily accessible for both in-patients and out-patients. As we do not wish to bring the out-patients into the body of the hospital, it seems reasonable to place these departments at ground-floor level.

"Each specialist department is housed in a cul-de-sac, and these wings can be arranged in a number of ways in relation to the main horizontal link. (a) If placed end to end along the back of the horizontal circulation, we can only conveniently add to the two end units, but the access to the individual units is good. (b) With a courtyard arrangement four of the units can be added to, but access to three of them is through corridors of the others, destroying the cul-de-sac principle. (c) The wings may project at right-angles to the ward block as independent "fingers," each on its own cul-de-sac. The circulation is straightforward, and each department can be added to or altered without upsetting the rest of the hospital organisation. The total number of beds can be increased by adding complete or half-ward units, preferably built up to the full height of six storeys, and additional specialist units can be added without upsetting the existing circulation system.

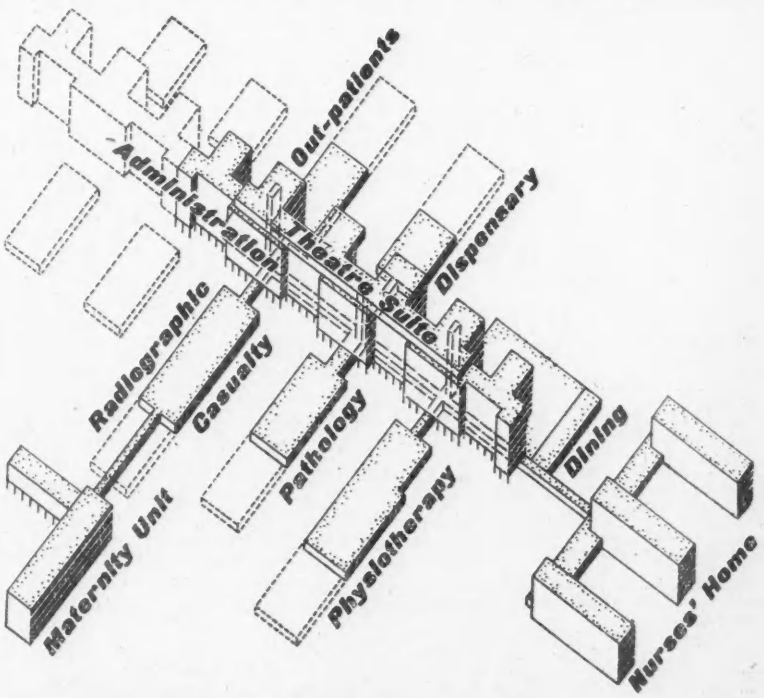
"The operating theatres might be in a cul-de-sac at ground level, but they need to be away from the main flow of hospital life, with no fear of interruption or of unauthorised people getting in. We do not believe that they will need to be extended unless the number of beds increases. We have therefore put them at the top of the building, over the wards. If a complete set of six ward units, one above the other, is added, more theatres could be added on top of them and therefore adjacent to the existing ones."

A further aspect of circulation to be planned for (added the speaker) was the greatest possible degree of segregation of out-patients and visitors from staff and food distribution. It seemed reasonable, the out-patients being kept to the ground floor, to have staff and food distribution at first-floor level, the first floor being almost entirely occupied by administration, catering, staff dining-rooms, linen department, and so on, and the wards starting at the second floor. The result was a nine-storey building. To overcome the problem of flat roofs projecting southwards from the ward block, they had planned gardens on the roofs, with beds for resting in during fine weather.

Duality of Control

In the discussion which followed, a speaker pointed out that in Mr. Powers's plan there were two major points of vertical circulation, which would mean dual control to some extent. MR. POWERS thought the point made about dual control a good one, and said the President had mentioned to him that there were advantages in grouping all the vertical circulation together, thus making it much more flexible.

Another speaker pointed out, however, that in the research work on which the plan described by Mr. Powers was based, one of the basic aims was to prevent any main circulation passing through the ward unit, which meant that each set of units must have its own vertical circulation. It was suggested that if the dual vertical circulation was neces-



Planning for internal circulation and future development. (Architects' Co-operative Partnership)

sary, this might be a criticism of the idea of having the ward units on a linear plan. MR. POWERS pointed out that if the wards were to face in one particular direction it led inevitably to a linear plan.

2.—The Economic Size of the Ward Unit

MR. REES PHILLIPS, F.R.I.B.A., in presenting this communication, said that in these days much concern was felt about the ever-increasing cost of hospital buildings. He proposed to examine the influence in this respect of two tendencies in the composition of the ward units, namely, the decrease in the number of beds in the unit and the multiplication of small wards, and the increase in the ancillary accommodation. A matter for early consideration in the design of a hospital was the size of the ward unit, and on the decision arrived at the layout of the hospital largely depended.

The report of the Ministry of Health Departmental Committee on the Cost of Hospitals, published in 1936 (continued the speaker) advocated 30 beds as a reasonable number to be under one sister and to form a ward unit. Since then, King Edward's Hospital Fund had suggested 24 or 25, and still smaller numbers, such as 18, were being considered. The nursing of patients in several wards requires more nursing staff than the nursing of the same number in one large ward, and also more ward maids, orderlies, and so on. I propose to compare three different types of ward unit. Type 1 is a typical ward unit built about seventy years ago, with 30 beds; Type 2 is a modern ward unit with 30 beds; and Type 3 is a possible 24-bed unit. I am taking these as providing 540 medical and surgical beds in an acute hospital for 800 beds. In arriving at costs the price of 6s. per foot cube has been adopted throughout. The results are shown in the following table:—

I have not attempted to deal in detail with the 18-bed unit, but for 540 beds it would require five six-storey blocks.

The housing of the nurses is a problem. At the present time a complete nurses' home probably costs not far short of £1,000 a bed. Any material increase in the number of nurses, therefore, increases the cost of the hospital. The total building cost to accommodate 540 patients and the necessary nursing staff in 30-bed units of Type 2 will be about £650,000, and to accommodate 528 patients in 24-bed units of Type 3, again with the necessary nursing staff, about £720,000. The merits of one size of unit as against another will have to be assessed from the medical and nursing point of view, but those who have to pay will have to take into account whether the additional expenditure is warranted in these days, when economy in hospital building, so far as it is consistent with the welfare of the patient, must receive full consideration.

The Height of Ward Rooms

It was suggested that the height of the rooms in the ward unit must have a material effect on cost. MR. PHILLIPS said that with large wards it was not possible to go below a height of 11 feet from floor to ceiling, but if the beds were dispersed in small wards, it would be possible to have a lesser height.

A speaker pointed out that if the ancillary rooms occupied almost 50 per cent. of the floor space it meant that nearly half the rooms were a great deal higher than they need be. Some concession to economy might be made in the wards, he suggested, in order to avoid this. MR. PHILLIPS replied that if a height of 10 feet from floor to floor were reduced to 9, it would not mean an economy of 10 per cent.; in a sense, the top foot was the cheapest.

Wards	*Type* 1 1 of 28 beds 1 of 2 beds (30)	*Type* 2 1 of 18 beds 2 of 4 beds 4 of 1 bed (30)	*Type* 3 1 of 12 beds 2 of 4 beds 4 of 1 bed (24)
Auxiliary accommodation	Kitchen sister's room test room 2 sanitary annexes containing bath, w.c.s and sluice	Kitchen sister's office rooms for preparation sterilising sluice tests flowers bath, cleaners linen and stores patients' lavatory staff lavatory soiled linen balcony	Much the same as for Type 2, though for six fewer patients.
Total floor area ..	5,000 sq. ft.	5,360 sq. ft.	4,760 sq. ft.
Floor area occupied by patients	3,300 sq. ft. (66%)	3,100 sq. ft. (56%)	2,500 sq. ft. (52%)
Floor area of ancillary accommodation and corridor	1,700 sq. ft. (34%)	2,260 sq. ft. (44%)	2,260 sq. ft. (48%)
Number of units required for 540 beds	18	18	22 (gives 528 beds only)
Number of blocks required	3 6-storey	3 6-storey	3 6-storey, 1 4-storey
Cost	£389,000	£416,000	£555,000
Bedside nursing staff required	198	234	264
Ward maids and orderlies	72	100	110

Another speaker mentioned the sharing of certain ancillary rooms between two ward units, of which there were some examples on the Continent. MR. PHILLIPS agreed that this would be very economic, if peace could be kept between the two sisters concerned, but where it had been tried in this country the difficulty had always been to decide who was responsible for the room. Examination and consulting rooms might well be shared by two or more units.

Another speaker said he had discussed the idea of sharing ancillary rooms with a good many doctors and nurses; some thought it would work and others did not. If the idea was accepted it would mean a new rank among nurses; there might be a junior sister in charge of each 18-bed ward unit and a senior sister in charge of a pair of such units.

3.—The Nursing Unit

MR. GEOFFREY FAIRWEATHER, A.R.I.B.A., said that the planning of the ward or nursing unit was probably the most important aspect of hospital design. The well-being of the patient, both psychological and physical, must come first, but could not be divorced from similar considerations affecting the nursing staff. To provide the perfect hospital was beyond our resources and a close analysis of the many problems involved was necessary to arrive at a practical compromise.

To confine his remarks (said the speaker) to the general surgical and medical wards in an acute general hospital, the tendency in the last two decades had been to condemn large wards with beds at right-angles to the windows, and instead to place the beds parallel to the windows and subdivide the wards into lesser social units, this sub-division not necessarily involving solid walls going from floor to ceiling. This was the most characteristic change over the last 20 years, and it had been accompanied by a halving, or thereabouts, of the number of beds in the ward unit. The latter was a natural corollary of the former for, obviously, the smaller units within the ward were more difficult to nurse and supervise.

The size of the ward unit depended—assuming our present high standard and system of nursing—on the number of beds which the sister could supervise to the extent of having a detailed knowledge of all her cases. Present-day opinion is that 30 beds was a maximum, and some preferred as few as 20. There was a strong case for the 12-bed ward, sub-divided by light, half-glazed screens into bays of four beds. This modification had a great bearing on cost, and it must be remembered that the average length of stay in the surgical ward was only 10-12 days, and in the medical ward about 18-20.

Three-Bed Deep Wards

The Burgerspital and Karolinska hospitals in Switzerland had their wards three beds deep, all parallel to the window wall. This is economic and sound from the building and nursing points of view. In addition to the ward with 12 beds, partitioned as described, the balance of the accommodation might be in single, three-bed, or four-bed wards, the proportion of single-bed wards for isolation purposes, special nursing or dying patients being approximately one-quarter of the total beds in the unit.

Coming to the ancillary accommodation, the sluice arrangements should have a recess

or bay for urine testing. In the past, the use of the bedpan in the ward had been endured in much the same spirit (said the lecturer) as that in which the late Lord Birkenhead advised the House of Lords to vote in favour of female suffrage—"if not with enthusiasm, yet in a spirit of resolute resignation." If a 12-bed ward was provided, there would be two sluice rooms. Whether every detail in them needed be duplicated was doubtful, but at any rate the facilities for washing and sterilising bedpans should be. In these days early ambulation was encouraged, and a patient might be on his feet two days after a serious operation. It was reasonable to suggest, therefore, that patients' w.c.s and lavatory facilities should be distributed more evenly over the unit, instead of concentrating merely two w.c.s and two or three basins in one room. Bathrooms should probably be duplicated. There would be a patients' day-room, a treatment room, with some laboratory facilities, a solarium (which might be fully glazed, so that it could be used in the winter and opened up in the summer), a ward office for the sister, a staff lavatory and w.c., with provision for the hanging of corridor cloaks, and a ward maid's room. A proportion of nurses and ward maids were likely to be non-resident, and, therefore, cloakroom and lavatory accommodation must be provided for them outside the ward unit and centrally at ground level, with locker facilities. There must also be a kitchen to each ward unit, a sterilising room, a linen store, a general store, a patients' clothes store, a dirty linen store, and a flower bay, which could usefully act as a light and ventilation bay.

A consulting room, where patients could interview a consultant or the chaplain in private, and possibly a visitors' waiting room, might be common to two ward units. The day-room presents an opportunity for imaginative treatment, and provision should be made for ambulant patients to have their meals there. The isolation of the bed accommodation from ancillary accommodation and general circulation was most important.

Size of Wards

Replying to questions, MR. FAIRWEATHER said he thought the biggest single ward which would be advisable would be one of 12 beds, subdivided into bays of four. He was attracted by the idea of the six-bed rather than the four-bed ward, three beds deep instead of two. Answering an objection to wards with a large number of beds on the grounds that at any one time there might be more men than women in the hospital, or more women than men, MR. FAIRWEATHER said that the difficulty of empty beds was a real one, but was linked with the provision of ancillary accommodation. Unless some of the ancillary accommodation were duplicated, he did not see how the point could be met.

A speaker suggested that it should be possible for wards to be mixed so far as sex was concerned, as was done in some psychiatric institutions. It would be an enormous simplification, he said, if wards could be bi-sexual.

4.—Operation Section

MR. LIONEL G. PEARSON, F.R.I.B.A., introducing this communication, said that the patients in a modern hospital occupied less than 10 per cent. of the space, and in the future there might be one patient surrounded by a great mass of apparatus, if the patient did not disappear out of the picture altogether. A famous surgeon at Charing Cross Hospital had said to him: "Don't think that the plan of the operating theatre is any substitute for the skill of the surgeon, which is what saves the patient's life." All that architects could do was to give the surgeon a feeling of confidence that his work would not be wasted. Some operations might last four or five hours, which meant that there had to be air conditioning and even suspended lamps from the ceiling which sterilised the air. There had to be a special system of heating, so that in an emergency the steam could be turned on in the middle of the night. There had to be emergency lighting apparatus, so that if there were an electricity cut the operation was not interrupted. The walls and ceilings must be of an easily cleaned material.

At Westminster Hospital the surgeons were anxious to have good separation between dirty work and clean work. The dirty work —the blood sink, and so on—was on one side, with a partition going up to the ceiling, and there was a swing door to the place where the surgeon washed his elbows, looking through a glass screen to keep an eye on the nurses. The sterilising room was centrally placed between two operating theatres, and the built-in sterilisers could be regulated from the back, so that the engineer did not need to go into the room. A weak point was that the anæsthetic rooms were both across the corridor, but one could never get the best of both worlds, although the client always thought that one could. It was difficult to provide a recovery room, an anæsthetic room, a sterilising room, a scrub-up room and a wash room all opening off the theatre!

An added difficulty in a teaching hospital was that the students had to watch the operations. In the old days the operating theatre was arranged like a theatre, and one in Philadelphia even had a drop curtain. It was better to have the students looking down through a glass screen. He regarded double windows as essential. American and many English surgeons did not want any windows at all, but that was hard on the staff.

MR. PEARSON concluded by saying: "There are so many young men here who one day, I hope, will practise hospital architecture that there must be one day a renaissance of English hospital architecture. At the moment our hospitals are a national disgrace. The Children's Hospital by Messrs. Easton and Cusdin, in Great Ormond-street, is one of the finest in the world, but the average English hospital is beyond words. I hope, however, that the hospital architects of the future will not lift their designs straight from Czechoslovakia. I saw a hospital the other day which might have been taken straight from Zlin. It did not look right in our landscape, nor will it be comfortable. This is a case of jumping from the mid-Victorian frying pan into the fire of extreme modernism."

Answering questions, MR. PEARSON said that with regard to lighting, surgeons were just as much creatures of fashion as women. Fluorescent lighting was being demanded at the present time; it was shadowless, and the stoboscopic difficulty had been overcome. There were generally about five lights under a hood.

The use of television for teaching students (said MR. PEARSON) was in its infancy, and views about it were divided at present. PROF. H. W. C. VINES said he felt that students ought to see the actual operation; they got more psychological "kick" out of it than from seeing what was in effect a film. Moreover, on television they would not see the drill of the theatre, which they were supposed to know.

Asked whether a recovery ward attached to the theatre was becoming general practice, MR. PEARSON said that in several hospitals he had been told that the patient was best moved back to the ward while still under the anæsthetic, and put, until he recovered, either in a single room or a little partitioned-off space near the entrance to the ward. The recovery ward was a counsel of perfection; the matron said she had not a nurse to stay all day looking after one patient.

5.—Research on Hospital Planning

Speaking on this subject, MR. JOHN MADGE, M.A., A.R.I.B.A., said that two or three years ago he was asked by the Nuffield Provincial Hospitals Trust and the University of Bristol to bring together and lead a team to investigate the social and medical role of hospitals, to examine how hospitals function and how their functioning could be improved, and finally to work out, and if possible try out and experiment with, designs for at least some of the important elements of a hospital, such as wards and out-patient services. The team collected for this purpose included Richard Llewellyn Davies as an architect, a physician, a nurse, a medical historian, an accountant, a field work organiser, and so on. Richard Llewellyn Davies had now taken over the direction, and the sponsors now desired that it should be concentrated mainly on the technical requirements of hospital planning—such matters as materials, performance standards and the organisation of space.

Indicating the kind of technical research which could be carried out, the lecturer said that with regard to performance standards, invaluable work had been done at the Building Research Station, with medical co-operation, to codify the proper standards of daylighting, ventilation, sound control and so on for schools, and suggest means of attaining these standards. It was clearly desirable to go through the same procedure in the case of hospitals, and to make a systematic assessment of needs in terms of lighting, heating, ventilation and so on in each major part of the hospital. That work was being undertaken in co-operation with the Building Research Station. Hospitals had also special requirements in regard to the materials used, particularly for facing. A great variety of flooring finishes were in use, and it was hard to believe that all were equally suitable for ward floors, for example. Not enough was known, however, of the physical and bacteriological qualities of all those materials to permit a completely rational choice between them, and the first step must be to tabulate their known qualities, in precise numerical form where possible, and relate these to their cost. Subsequently, the flooring materials which came out well from the examination could be compared under real ward conditions.

A similar process was possible for other materials and items of equipment. Research of this nature needed to be carried out only once, and should give results valid on all similar occasions until conditions changed, or some new material or equipment was produced.

"So far as the organisation of space is concerned," continued the speaker, "we have all met the conflict between the compact and the open plan. The compact building is cheap to put up and to run, but inflexible in planning, while the open plan is much more flexible but inherently expensive in first cost and running cost. There is a danger of being too lavish with space, and also a danger of cutting it down so that the building is inefficient. There is the further point that if buildings as big as hospitals are to be easy and economical to operate the commonest routes of communication must be made as short as possible. Similarly, work within the wards and other individual departments requires the staff to move constantly between different points. This affects nurses most of all, and, as the shortage of nurses is the major problem in hospital staffing, anything that can be done to save their time is highly desirable.

Economical Planning Principles

"How are we to apply these general principles in planning an economical hospital? First, we have to ensure that the right amount of space is devoted to each separate function. In the wards, the really important dimensions are those of the space containing and surrounding each bed. These dimensions seem never to have been tested scientifically at first hand, and at present there seem to be two conflicting tendencies, one towards reducing the space between beds and the other towards increasing it. Most Continental countries are tending to cut down their bed spacing well below existing British standards. The question of whether it is possible to have three beds deep has a big bearing on that. If you have the spacing of beds found in some Continental hospitals, which can be as low as 6 ft. 6 in., with hardly more than 3 ft. between beds, the problem of lighting the inner bed is very much simplified. In England we tend to go to the other extreme, and the nursing profession feels that the existing standard, of about 8 ft. between bed centres, does not allow sufficient space for modern nursing conditions. We believed that this issue could be readily tested by a fresh examination both of the essential furniture and equipment and of the actual medical and nursing procedures carried out around the bed. The method used was to collect existing information, combined with some sporadic direct observation, to frame a hypothesis on semi-theoretical grounds, and to test and demonstrate it under real nursing conditions.

"The necessary size of the various utility rooms, and so on, can be derived from detailed observation of the activities going on in them and the number of nurses and other staff likely to be working in them simultaneously. This information is being gathered by time-study methods, but it should be mentioned that the observations made in existing hospitals sometimes require considerable interpretation to allow for any necessary changes in the uses to which each room is put. For example, the traditional sluice room is used for a strange variety of activities, which may well have to be sorted out in current plans. It has been possible to determine the most economical relationship between the rooms in a particular ward unit or other individual department, and also between the separate departments. The criterion here is the saving of walking distance for the staff, and the number of journeys between different points gives the information required to devise a plan to reduce walking to a minimum."

An Expert Intermediary Needed?

Unfortunately, the architect's mastery of technical problems did not ensure that his designs would translate into satisfactory buildings, if the requirements which he succeeded in satisfying were themselves wrongly conceived. There were a few types of building the requirements of which were adequately known. This, however, did not apply to the design of hospitals, and most architects were increasingly concerning themselves with the human and social functions of the buildings for the planning of which they were responsible and were correspondingly worried by the lack of clear and realistic guidance provided by their clients. What appeared to be needed, therefore, was some sort of expert intermediary between the client and the architect, who could discover what the client needed—not merely what he thought he needed —and could interpret it in a form suitable for use by the architect. Some architects attempted to fill this role themselves, but in general it was within neither their responsibility nor their competence to do so.

The lecturer continued: "How does this apply to hospitals? The assessment of needs and the balancing of conflicting needs in a building as complicated as a hospital is a very large subject, and I can choose only a few illustrations of problems which the team of investigators was able to tackle.

"The first concerns how many in-patients should be grouped together in one room. There is first the medical aspect to be considered. For well over a century it has been customary to attach to each ward unit one or two small side rooms, originally intended for the very ill, the dying, the noisy or the smelly. These rooms are not always used for their intended purpose, partly because nurses wish to keep patients who are very ill under particularly close observation, which is difficult if they are shut away, and partly because every ward tends to have some privileged patients. The problem of poor visibility can be partly overcome by planning, and it is evidently an advantage both to the patient concerned and to his ward-mates that if he is very ill, infectious, or an immediate post-operative case he should be put in a single room away from the rest. On the other hand, single rooms waste space and the time of the nurses." Dr. Goodall, the physician on the team, had been asked to find out what proportion of cases should be in single rooms on medical grounds, and the report on this survey should appear shortly in a medical journal.

There remained the question of how to group the remaining patients. Such evidence as existed suggested that the social atmosphere was better in a larger group, though not necessarily a group of 25 to 30, as in the old open ward. The researchers had hoped to be able to contribute to this subject, but had drawn a blank. It was clearly of great importance to hospital architects, and one which could be investigated by scientific means. American sociologists were doing a great deal of work on the harmony within groups of up to about a dozen people, and the results might one day have a direct practical bearing on hospital design.

His last example (said the speaker) concerned the right size of the nursing unit, which was the crucial question in ward planning. The most straightforward statement was that the proper size depended on the number of patients who could be supervised by one ward sister, and it was fairly generally agreed by the orthodox that that number, which in the old open ward was between 30 and 40, must now, owing to the sub-division of wards and the increased intensity of nursing, be reduced to about 25. Under the influence of Miss Grant Glass, the nurse on the investigation, they came to realise that this conclusion depended on one very important assumption, which might not be justifiable, which was that the sister should be directly responsible for all the patients in her ward, and that the rest of the ward staff, whether trained nurses or not, should merely act as fetchers and carriers for her. Attention was called to the very different forms of ward organisation on the Continent, and to a number of interesting variations in this country from the normal practice.

Mr. Madge continued: "These alternatives might be dismissed but for the alarming shortage of nurses, which makes it necessary to examine whether the traditional allotment of all responsibility to ward sisters is satisfactory, and whether any modifications would be likely to overcome the nursing shortage. It would be dangerous to put forward conclusions on this subject without a full-scale practical comparison between the merits of the normal ward organisation and of any suggested alternative. It has been possible, however, to collect a number of pieces of evidence which, though separately inadequate, together make a strong case for a revised organisation. . . . Too little responsibility is required of the trained nurse, and too much skill and responsibility of the student nurse. If it is true that the most serious aspect of the nursing shortage is the wastage of trained nurses in the first two or three years after qualifying, the crucial question is how to retain their interest and maintain their morale. One promising idea is to give each trained nurse direct responsibility for a small number of patients, a system found in some nursing homes and private wings. The present-day ward sister, who is often over-worked and over-burdened with responsibility, could have her load reduced by fuller delegation of duties and by an improved line of authority between her and the hospital matron. These are speculations, but in my opinion the optimum size of a nursing unit cannot be established without a full consideration of what should be required of all grades of nursing staff."

In conclusion, the speaker said: "The health authorities now have vast opportunities for objective observations and controlled experiment, and it is by exploiting these opportunities that they will forge an efficient and economical health service. As far as I know, hardly anything at present is being done systematically to discover how best to lay out our health expenditure."

Design of Technical Equipment

Speaking in the discussion, PROF. H. W. C. VINES referred to the technical equipment of hospitals, and said that in this country the hospitals were too much at the mercy of the manufacturers, and it would be a good thing if the manufacturers were sometimes told what the hospitals wanted and had to meet their demands. In the United States there was a special department of their Ministry of Health which dealt with hospital requirements on those lines, and when he was in Zurich he found that the architects were making a great deal of the technical equipment of the hospitals themselves.

(To be continued)

BUILDING MAINTENANCE

An Eighteenth-Century Record

THE following items of interest in building maintenance, etc., have been extracted by Mr. Arthur Welford from the churchwardens' accounts, 1711 to 1752, of the parish church of St. Cross, South Elmham, Suffolk :

STONEMASON, BRICKLAYER AND PLASTERER

1712	pd John Collings for Masons worke done about ye Church		01	
	pd John Heavers for bear ye workmen had		00	
	pd Mr. Ellis Braham for a Chalder (? 36 *bushels*) of Lime for St Cross Church		0	
	pd Edmund Moore for 500½ of Bricks ded att Church		00	
1725	payd goodman Battes for 2 days' work for him & his man	00	05	00
	for 3 Buchels of Lime	00	02	00
	for pecke of haer	00	00	04½
	for fechen the Lime from Metfield	00	00	06
1726	for feching haer and Lime from Halston	00	01	06
	for helping the Mason at Church & one queat beer	00	01	00
	More for John Barnes the Mason for Work done	00	03	06
1732	Paid for Masons work & for 4 Bushels of Lime	00	03	00
	for fetching ye Lime & for Beer for ye Workmen	00	01	
	for fetching of Sand	00	00	
1740	for fetching brick & lime from Bungay	0	3	0
	for Milk for Measons to Use in ye Church (*possibly for mixing with lime mortar to set it.*)	0	0	4
	Paid a Mason's bill for work done at ye Church	3	3	0
1747	paid a Meason's Bill	0	6	8

PLUMBER

1712	pd more for new Leading ye Church & sum new Lead 500—2 qr.—11 p att 11s pr hundd (*new lead was at 130s. 9d. in September*, 1950)		25	
	pd John Mason for Lead Nailes & Iron worke		01	
	pd Mr Tho Baylie for 16 ct 3 qr 18 lb. of new Lead att 11s1d Hundd		09	
	for A Loade of Lead fecched from Bungay to flixton Abby to Church			
1721	for Glazing and plumers work	00	03	07
	Paid to Hounsam for New running of 12 c of old Lead at 3s 6d p Hundred	02	02	00
	for two Hundred & half of New Lead at 16s 9d p Ct	02	01	10
	for 3 bushels of Coals	00	02	00
	for carrying and bringing back ye Lead from Harlston (*Apparently the old lead was taken to Hounsam at Harleston, who melted it and ran it into sheets on a sand-tray ; possibly mixing the new lead with the old. He charged the price of the coal used in the melting.*)	0	05	00
	pound Lead Nailes	00	01	00
1740	for fetching ye Lead for ye Church	00	06	00

CARPENTER

1712	pd Richard fflattman for Carpenters work done		06	
1714	for 16 fouts of plank and half	00	04	01½
	22 fouts of Bord	00	02	02
	47 fouts of Rails and geise (?)	00	06	00
	28 fouts of Borde intch & cwarter	00	04	08
	Nayls in all	00	01	03
	Carpenters' work	00	06	00
	post & one Rail	00	02	06
	days Carpenders work more	00	01	06
1718	payd the Carpender for menden the fott Bridg (*over the Beck into the Churchyard*)	00	03	00
1717	for a Lock of the Church yard gate	00	00	06
1718	Laid out for 150 peals (*fencing*)	00	13	04
1719	payd for : 2 : payer of gemers (*hinges*) for the Church	00	00	06
1721	for 40 foot Lynnings at 2d p foot	00	06	08
	for foot Laths at 1½d p foot	00	05	00
	3 days and a halfs work	00	05	03
	for drink for the workman	00	01	00
1723	Paid to John Mason for mending the foot Bridg	00	01	00
	Paid for half a hundred pales & fetching home	00	05	06½
	paid for foure pound of Nailes	00	01	04
1726	Layed out for a Chist for the Church	00	07	00
	More for 2 Lokes for the Chist	00	01	04
	Paid for : 73 : Pales one post, Six Spores (? *spurs*) : 10 Shilpes *	00	13	06
1728	Layd out the Towne House for Carpendre worke & timber and nailes (*Repairs to the Parish "Office"; elsewhere referred to as "the Cottedg on the hill," for which* 6d. *Lord's Rent was paid.*)	00	04	09
1732	Paid to Will Wade for 100 & half of Pales	00	1	
1735	for 8 Rod of Paleing agt. ye Church Yard at 10s 6d p Rod	04	04	00
	for a Bench to sett upon in ye Church Porch	00	05	00
1737	for 53 foot of Plank to mend ye Church Bridge	00	17	08
	for Irons & Nails for ye Bridge	00	02	06
	Paid to Robt. Morse for Carpenters Work	00	06	00
	for Posts & Rails for ye Bridge	00	03	00
	for Beer for ye Carpenters	00	01	00
	Paid to Robt. Morse for building a Seat in ye Church for ye Singers	01	15	00
1740	Paid a Carpender's bill for 7 Rods of new pealing at 10s p Rod & mending ye Old peals about The Church Yard	4	4	0
1745	paid for Mending the foot Bridge and stuff	0	1	6
1750	Paid Robt. Squire for Mending the Stoole in ye Porch	00	01	0
1752	Paid Robert Clarke for Mending the Stocks	0	04	0

GLAZIER

1712	pd Richard Hounslea for glasing done att Church	00		
1717	payd for Gleasen work	00	03	02
1718	payd for Glasen work	00	10	00
1721	for Glasing & plumers work	00	03	07
1722	for Mending the Church Windows	00	00	02
1723	for Glazeing done to the Church Windows	00	07	07½
1724	payd Simon Rackham for nailen up of a pane of glase	00	00	03
1725	for wood for glaser	00	01	00
	payd John Masen for 32 Lager penes & Joirn wd 9 pond	00	05	08
	payd the glaser Bill	01	03	00
1729	paid for Glasing	00	08	
1730	Paid the Glazier his Bill for Soldering the Leads of the Church & for other work	00	12	04
1734	for Glaseing Work done at the Church	00	02	01
1737	Pd for Glazeing ye Church	00	03	07
1740	Paid a Glazer's bill for work done at ye Church	7	10	
1750	Paid the Glazier's bill for Work done at ye Church	0	11	2½

THE BELLS

1714	for a new Ball wheel	00	18	00
1715	Gin to the Ringers at powder Treason (*an annual ring on November 5*)	00	02	06
	for a newe Ball Roope wayd :5: pownds	00		06
	payd a Carpender for a new Boldren (?) for the Ball	00	03	00
	payd the Black Smith for Jorns for the Bales	00	0	
1717	for a new Beall Rope wayd : 7 : pounds	00	03	06
1718	payd more for Jorns for the Balls	00	01	00
	payd the Carpender for menden the Balls and for nayls & Bords for the Balls in all	00	03	
1719	payd for eyl for ye Bals (*a yearly item*)	00	00	06
	payd for a Ball Roope	00	03	06
1720	for a newe Bell Roope	00	03	06
1721	for a new Bell Rope	00	02	09
1722	for a New Bell Rope	00	02	06
1724	Paid for Oyle & Splising the Roops		0	
	payd John Mason for menden the Belles		03	03
1725	payd John Mors for menden the Ball & stufe	00	05	00
1726	Paid for a Bell Rope	00	04	00
1727	gaue the Ringers at the Crownenacon day (*George II*)	00	05	00
1728	Gaue to the Ringers at Crouneaticion	00	0	
1730	To Tho Nudd for Collars & Shears for ye Bells 6d & for Oyl for the Bells 6d	00	01	00
	for fetching & Carrying home the Leather and attending upon the workmen	00	01	
1731	Paid to Ino Morse for work done at the Church & for Mending the Bells	00	03	06
1734	for Black Smiths Work about ye Bells	00	04	04
	Pd to ye Carpenter for Work done about ye Bells	00	02	0
	for Beer for ye Carpenters & Blacksmith	00	01	00
1736	for a new Bell Rope	00	02	
1737	for Carpenters work done in ye Church & to ye Bells	00	05	
1740	Paid for a bell rope	0	3	6
1741	Paid for Carpenders Work and Spiels (*Wood pegs*) and Nails used and done about ye Bells	00	02	00
1745	for 2 New bell Ropes	00	07	00
1746	paid a Carpenter's Bill for work done about the Bells	2	2	0
	paid for the brasses belonging to the Bells	0	12	0
	paid for the Stock for 1 of the Bells	0	5	0
	paid a Smyth's Bill for work done about the Bells	1	0	8
	paid for the Allowance of Drink for the Sd. Workmen	0	6	6
	paid for 2 pounds of Nails used about the Bell wheels	0	0	8
1748	paid for a Bell-Rope	0	3	0
1750	Robert Clarke for Irons for the bell			
	And for an Iron bar for the Church window	0	1	0

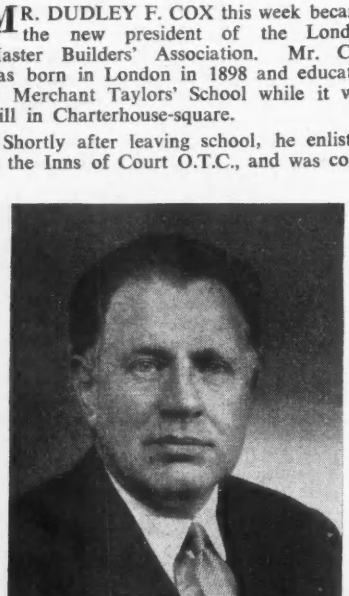
* Or Stulpes. Posts and rails, moveable, across a cartway to stop all traffic other than occasional or special ?

L.M.B.A.'s NEW PRESIDENT

Mr. Dudley F. Cox

MR. DUDLEY F. COX this week became the new president of the London Master Builders' Association. Mr. Cox was born in London in 1898 and educated at Merchant Taylors' School while it was still in Charterhouse-square.

Shortly after leaving school, he enlisted in the Inns of Court O.T.C., and was commissioned into the Royal Flying Corps in 1916, serving in France as a pilot with No. 66 Squadron in the following year. Subsequently, he held staff appointments at the Air Ministry and Middle East Headquarters. In 1919 he returned to England, and on being awarded a permanent commission was further employed in staff duties at the Air Ministry until 1923.



Mr. Dudley F. Cox

In that year he resigned his commission in order to join the firm of Haymills, Ltd., with which he had family associations and of which he is now chairman and managing director. It was engaged at the time in extensive estate developments in north-west London, and it was on this work that Mr. Cox received his early education in the building industry.

Mr. Cox brings to his task as president substantial experience of the ways of Government Departments. In January, 1943, he was invited by the Ministry of Works to take charge of the scheme then being developed for the repair of lightly bomb-damaged (C (b)) houses. Within two months of his arrival the scope of his duties was widened, and he was appointed deputy director of Emergency Works and chairman of the Works and Buildings Emergency Organisation, with which his predecessor as president, Mr. R. R. Costain, had been closely associated. The W. and B.E.O. was concerned with the voluntary organisation of building firms all over the country to deal with emergencies, and in the course of his duties Mr. Cox travelled widely throughout the country and met all the leading figures on both sides of the industry. In January, 1945, he was sent by the Ministry to Northern Ireland to organise through the Government the transfer of firms and labour to London for bomb damage repairs, with the result that some 3,500 men were quickly brought over. At the end of the war he wound up the organisation and returned to his firm.

Mr. Cox has been closely associated with the L.M.B.A. for the past 12 years. He was elected to the Council in 1938, and except for the period of his service at the Ministry of Works in 1943-45, has been on it ever since. He became vice-president in 1948, an office which he has held, with increasing seniority, for the past three years. He was founder chairman of the North-Western Area, in which his firm has its headquarters, in 1942. He was a member of the Council of the National Federation in 1941 and 1942, and since 1948 he has again represented the L.M.B.A. at New Cavendish-street.

BOOKS

ENGLAND WEST. By Sydney R. Jones. Pp. 272. Illustrated. (The Studio Publications.) Price 18s. net.

MR. SYDNEY JONES now gives us the second volume of the trio with which he proposes to cover all England, apart from his fine books on London and the Thames, which many of our readers will know. He is regarded by many of us as the most sensitive and appreciative living delineator of England at its best, and only at its best.

He has no use for squalid backyards and canal-banks, for pyrotechnic skies and volcanic effects. The England that he shows us here is old England and unspoiled England. He searches for beautiful subjects, ignoring everything erected by human hands since 1800 or so, and all the hideous products of the industrial age. This volume covers, *inter alia*, the industrial areas of the Midlands and the North-West, but the only picture from those bleak and enormous conurbations is a sketch of Archer's tower at Birmingham Cathedral, though he does give some description of them in his racy text.

That text is, indeed, most readable and unconventional, crammed with information on history, local customs, buildings, geology and landscape. It is an excellent guide to regional architecture and is written with immense gusto. The author has spent a long life in journeying on foot or awheel, in cars and in trains, over the byways as well as the highways, and he revels in rustic inns. In fact, he loves England for its own sake and does not regard it merely as a medium for providing him with exhibitionist stunts as a draughtsman. Literary critics may deplore his frequent clichés, and may even shudder when he describes Dean Swift as "the rev. gent," but most healthy-minded people will welcome his infectious enthusiasm.

In this book, however, as in his previous volumes, the drawings are the thing, and what a joy they are to behold! His hand has lost none of its cunning after fifty years or so of busy exercise. His double-page drawings of Oxford from Elsfield, Bristol, Burnsall, Gloucester, Hereford, Lichfield ("6.30 a.m."), Shrewsbury, Chester, Worcester, Lancaster and Carlisle are pencil sketches of the highest order and of very recent date.

More definitely architectural subjects include Grimshaw Hall in Warwickshire (an unusual example of fine half-timbering), an interesting page of Lancashire stone towers, and delightful "notes" of details in Cheshire, Shrewsbury and Oxfordshire. Among beautiful impressions of pure landscape are the drawings of the Severn Valley, Caer Caradoc, the Pennine dales, the Cotswolds, Leek Wootton, and the Chilterns. The reproduction of all this delicate pencil work is admirable.

M. S. B.

DARTMOUTH: A HISTORY OF THE PORT AND TOWN. By Percy Russell, F.S.A. Pp. viii, 184. (B. T. Batsford, Ltd.) Price 18s. net.

DARTMOUTH to-day, though a municipal borough, contains less than 6,000 inhabitants. It would be smaller still but for its comparatively recent acquisition, the Royal Naval College, which brought it back into the limelight nearly 50 years ago after a period of decline. It is, therefore, surprising, at first sight, to find its history produced in a format matching that of the same publisher's well-known series on famous cities, including Edinburgh, Oxford and Canterbury. Yet Dartmouth itself has a famous history, and obtained its charter in 1341. Even before that date it had been the scene of stirring events. From its fine harbour the Second Crusade set forth in 1147 and the Third in 1190. All through the Middle Ages it had a brisk maritime existence, mainly concerned with the French wine trade. Chaucer's "Schipman," the typical sailor of his day, hailed from "Dert-y-mouthe."

Then came a stagnant period in the fifteenth century, when Bristol captured some of its trade, and England lost much of her territory in Western France. In the Elizabethan period there was a revival. Many of the great adventurers set sail from the port: among them Humphrey Gilbert, John Davis, and Sir Walter Raleigh. Dartmouth sent nine ships for the fleet that attacked the Spanish Armada in 1588, and for the next 60 years was very prosperous. During the Civil War the town favoured the Parliament, sustained a long siege by the Royalists, was taken by them in 1643, but recaptured by Fairfax three years later. Then the slow decline began. A brief period of prosperity came in the latter part of the nineteenth century, when ocean-going liners used the port; then there was some coaling activity.

The Second World War once more brought Dartmouth into prominence, and some air-raids followed. On June 4-5, 1944, 480 vessels passed out of the harbour on their way to the Normandy landings. All these events produce a story of great interest, told by the author in detail from a considerable mass of material hitherto unpublished in popular form. The illustrations add to the value of the book, but there is need for a really good map of the town and district to a scale of one inch to a mile or more, to enable the reader to follow the text. The captions on pp. 23-35 are inconsistent: "Sand Quay" on p. 24, "Land Quay" on p. 25;; "Foss" on p. 23, "Fors" on p. 24. The historical buildings of the town are not of great importance, some of the best having been bombed, but those that remain are illustrated.

M. S. B.

ENGLISH INTERIOR DECORATION, 1500-1830. By Margaret Jourdain. Pp. xii, 84. Illustrated. (B. T. Batsford, Ltd.) Price 63s. net.

THIS HANDSOME VOLUME does credit to a firm of publishers who have a reputation for producing fine books. In these days of austerity it is a surprise as well as a

pleasure to find thick paper, generous margins, and a really magnificent series of over 200 illustrations—most of which are large and several in colour. According to the preface, this work is based upon the four previous volumes of the publisher's *Library of Decorative Art*, which included furniture in addition to interior decoration. The present book deals with interior decoration only, and is to be followed by another on furniture, thus compressing the original four volumes into two. In this transformation a number of new photographs have been included, and examples of contemporary work from the United States have been inserted "for purposes of comparative study." There are 20 of these, but less than half a page of text to accompany them. Greatly daring, the author has also included specimens of the early Gothic Revival from Strawberry Hill, Eaton Hall, Ashridge, and elsewhere, together with some interior views of the Brighton Pavilion. Only a generation ago such work was regarded with horror, if not derision, by many critics; but now the whirligig of fashion has swung back again once more.

Miss Jourdain is an experienced art-historian who knows her period well, and, in fact, was largely responsible for the preceding volumes. Her text is both learned and interesting, throwing much light upon contemporary habits and taste as well as upon decorative technique. The writing is compact, bristling with facts, dates and quotations, but nevertheless very readable. The sections dealing with foreign influences and foreign artists, all through the three centuries, are as good as anything of the sort that has ever been written. The author's encyclopædic knowledge is reflected in the choice of illustrations, which include numerous views of comparatively unfamiliar mansions such as Attingham House, Chicheley; Crichel House, Dodington Park; Hagley Hall, Ragley Hall, and Sudbury Hall.

One cannot help reflecting upon the fate that awaits all these superb interiors in a servantless and poverty-stricken age. Some have already perished. The book contains a few regrettable slips in proof-reading, e.g., on the second line of page 58, and in the scale of the drawing on page 28; but, taken as a whole, it is an excellent piece of work, and even experts on this fascinating subject should find it useful. M. S. B.

⁂ *Books reviewed in these columns may be obtained on application to the Publisher, "The Builder," 4, Catherine-street, Aldwych, W.C.2. Cash should accompany the order.*

COUNTY ARCHITECTS' SOCIETY

THE THIRD joint annual dinner of the County Architects' Society and the City and Borough Architects' Society was held recently at the 96 Restaurant, Piccadilly, with Mr. A. G. Chant, president of the County Architects' Society, presiding, supported by Mr. L. C. Howitt, president of the City and Borough Architects' Society.

Approximately 60 members and guests were present, the guests including Mr. J. L. Denman, F.R.I.B.A., vice-president of the R.I.B.A.; Mr. C. D. Spragg, C.B.E., secretary of the R.I.B.A.; Mr. G. H. Banwell, secretary of the A.M.C.; Mr. R. R. Meyric Hughes, deputy secretary of the C.C.A.; and Mr. J. Harper Smith, O.B.E., LL.B., Town Clerk of Lincoln.

POST-WAR BUILDING BY HOUSING ASSOCIATIONS

A Talk at the Housing Centre

IN an address to the Housing Centre on January 9, on "Post-War Building by Housing Associations," MR. HARRY MONCRIEFF, F.R.I.B.A., A.M.T.P.I., who has acted as architect for several such bodies, made some criticisms of the present organisation of the building industry and referred to building costs to-day as "a very serious question for housing associations." They had risen, he said, much more than most other costs since the war. One reason for that, of course, was the improved conditions for the workers, such as being paid for "wet time" and Bank Holidays, which most people would approve.

Mr. Moncrieff also referred to "building rings" which, he alleged, kept up the prices of materials. He remarked that he understood the arguments of Socialism with regard to this matter and he also understood the arguments of private enterprise, but he could not understand the arguments in favour of price rings, which were neither one thing nor the other. It was a fact that if you put out tenders for, say, metal windows, you were quoted the same price in nine cases out of ten. The same thing applied to electric cables.

Mr. Moncrieff spoke of the disorganisation of the building industry during the war and what he described as "that awful system of 'cost-plus' for war-damage repairs." He thought that we could not go on for ever subsidising the building industry at the expense of the rest of industry.

At the beginning of his talk and again at the end he made a plea for more originality, more pioneering, in housing. It was extraordinary that building had got into a rut. That was partly due to the regulations, but in spite of these he thought it was possible to explore and try new ideas. He thought there was great scope for housing associations in that direction.

He quoted some of the special types of housing which housing associations and societies had engaged in during recent years, such as war memorial schemes, schemes for old people and single women, and hostels. He suggested that dwellings for single men might well be considered, and in advocating this form of pioneering, drew upon his memories of the time when he was a single young man in London and suffered some unpleasant experiences in looking for and living in lodgings.

He thought there were possibilities in providing flats with lifts for old people, but in drawing attention to a scheme for old people which was displayed recently at the Housing Centre expressed the view that the cost of £38,000 for housing 35 old people and staff was rather too much.

Much more could be done by housing associations, he believed, in reconditioning old houses. He mentioned a scheme at Blakeney, where 30 cottages, built in an old traditional style, had been purchased and preserved for the occupation of local people. Without this sort of thing being done, we should lose all our old traditional country buildings.

Referring to an article in the *News Chronicle* by Mrs. Pleydell-Bouverie on building one's own house, Mr. Moncrieff said that it was one thing to do this in the Californian sunshine, as Mrs. Bouverie had seen it being done, but quite another to build in England in the bad weather conditions we had recently experienced. He had every admiration for the people who did their own building, but he thought the difficulties were tremendous. He would be very surprised if the building of one's own house developed to any great extent in this country unless we could find some form of prefabrication which would reduce the number of hours spent on the site.

In Scandinavia people were able to build their own houses by a prefabricated system which enabled the dwellings to be erected in a very short time. Plumbing and other specialist services were laid on by the housing society so that people moved into a completely organised set-up. This was not so easy to do here, especially having in mind our walling system. The secret of the kind of self-building work which was done abroad was that it was mostly in timber. In Britain, with our brick tradition, it would be much more difficult. Trade unions were also opposing it and bringing up the question of safety regulations, on which we were keener than most other countries.

Mr. Moncrieff spoke of the great difficulties which housing associations had had to face during the last few years, but said that in spite of them something like 6,000 new dwellings had been built by these agencies. He hated to think, however, of how many schemes had been drawn up, but not completed. He hoped there would be some results from all the efforts put in in committees and on the drawing-board by housing societies.

Offering some advice on procedure and methods, Mr. Moncrieff advocated housing associations approaching the local authority before their plans were cut and dried. From his own experience, he said, the local authority greatly appreciated being asked for their views before the details of a scheme had been put on paper. By approaching the local authority, first one could ascertain what sort of allocation of houses one was likely to get. He had found most officials very helpful.

With regard to finance, he stated that the loan charge of three and a quarter or three and one-eighth per cent. charged to housing associations, compared with the three per cent. paid by local authorities, was a handicap and on an ordinary house meant a difference of 6d. to 1s. a week. He also considered that the differentiation between the subsidy granted on the two-storey flat and that given for the three- or more-storey flat was unfair to the former. In a scheme for a mixture of two- and three-storey flats you were only granted the subsidy for two-storey flats.

Mr. Moncrieff pointed out that under the 1949 Housing Act housing societies could be granted (a) three-quarters of the estimated annual loss on conversion development for 20 years or (b) 50 per cent. of the cost of conversion if it was between £100 and £600. Also, under Section 40 of the 1940 Act, £5 per room could be granted for hostel development, and under the National Assistance Act £7 10s. per single bedroom for 60 years for hostels. It was not, however, as easy to get these grants as it would appear at first sight.

SANITARY SERVICES

Their Effect on the Planning and Design of Buildings

CO-OPERATION between the architect and plumbing designer was stressed by MR. F. L. BARROW, M.Sc., A.M.Inst.C.E., M.I.Struct.E., F.R.San.I., of the Building Research Station, when he read a paper* on the effects of sanitary services on the planning and design of buildings at a meeting arranged by the Architectural Science Board on November 21 last. Mr. Barrow said that as an engineer he could not hope to peer very deeply into the mind of the architect, but he would hazard a guess that when designing a building the architect would want it to look well; to make efficient use of the space at his disposal; and to use modern developments—in so far as his client could afford them and aspired to be in the van of progress. No doubt there were other considerations in the architect's mind, he said, but he proposed to restrict himself to these three because they affected the plumbing, and what the architect could do to the plumbing by forging ahead unmindful of its claims was the burden of his talk.

The plumbing designer, too, had things in his mind, Mr. Barrow said; he wanted the water supply and the sanitary services to be efficient and he wanted them to remain so with a minimum of maintenance.

Mr. Barrow went on to confront these aims of the architect with these aims of the plumbing designers; his first subject was the familiar one about putting the plumbing pipes inside the building. This subject, together with the others in his talk, from which we publish the following extracts, is arranged under the headings—Introduction; the arguments "for"; the arguments "against" and recommendations.

Internal Soil and Waste Stacks

Introduction. I wish people would not say, in such a general fashion, "Why do we not put the plumbing pipes inside?" We *do*, except for soil, waste and rainwater downpipes and very short branch connections to them. Completely internal plumbing is the general rule in some other countries, and in this country in our large modern buildings we often do bring soil and waste stacks inside. But why is it otherwise general practice in British plumbing to put them outside? Let us examine the subject.

The arguments "for." I can quote two arguments in favour of internal stacks. They are: (*a*) improved appearance of external elevations; and (*b*) good taste. I am not quite sure about this point. As a sanitarian I am not so likely to feel, as others might, that the external exposure of soil and waste pipes is perhaps a little indelicate. Is this so? If it is, it may be significant that there is much less objection to *rainwater* stacks showing on the elevation. Admittedly, these can be made to look quite pleasing—I believe "architectural feature" is the phrase—but could not soil pipes be made to look just as attractive?

The arguments "against." There are several good reasons why we have been using external stacks. They are: (*a*) Cost. Undue cost delays the spread of good sanitation. When internal stacks are used cost tends to rise because space has to be allotted for these pipes within the building, they may have to be cased-in for the sake of appearance, which has to be paid for, and the pipes used may have to be of higher quality than would suffice externally.

(*b*) Risk of leakage. Two points to make here are: plumbing labour in a given area may not always be good enough for complete safety with internal stacks, and if leakage should occur inside a casing it may be some time before the defect is noticed—which aggravates the risk.

(*c*) Planning. Internal stacks do not present any particularly serious planning problems in one-storey buildings. Nor do they in multi-storey buildings where the rooms containing plumbing are one above the other. However, it may be awkward in *two-storey houses* to accommodate an internal stack. It is very common in such buildings to have the bathroom over the kitchen, and this is good planning from various points of view. But how, if the soil stack is to be internal, do you bring it down satisfactorily through the kitchen? I think that a number of attempts to use internal stacks in two-storey houses have been abandoned in face of this difficulty.

Recommendations. In tall, multi-storey buildings (flats, hotels, office buildings, etc.) the arguments for internal stacks generally outweigh the arguments against them, because cost is not so critical, labour is usually more reliable and one can expect maintenance. Also, the usual types of planning of such buildings are favourable to internal stacks since it is advantageous on other grounds to superimpose the rooms containing the plumbing services. But in low-rent two-storey housing, for reasons I have given, the arguments against internal stacks usually overbalance the arguments for. There are, of course, border-line cases, and there one has to arrive at a reasonable judgment after considering the contributing factors of cost, leakage risk and planning.

Concealment of Internal Pipes

Introduction. In this subject, as with all the others, there are several considerations to bear in mind when trying to reach conclusions. In this case, one has to think of the class of building, whether office building or small house, for instance; the method of concealment, in cupboards, behind panels or built-in; the direction of run of pipes, vertical, inclined or horizontal; and the external size of pipe and its connections, comparing, for example, cast iron spigot and socket pipes with light-gauge copper pipes.

The arguments "for." The arguments for concealing pipes rest on: (1) appearance, especially where pipes are of relatively large diameter and not vertical. In this connection note that the amount of "non-vertical" pipe run in a building depends very much on the location of the plumbing appliances relative to one another. (2) simpler cleaning of rooms when pipes are not exposed, and (3) possibly some reduction in plumbing noises.

The arguments "against." The arguments against concealment of pipes are: (*a*) cost in materials and space occupied within the building; (*b*) risk of vermin infestation. This normally applies only in buildings where there are definite attractions to vermin in the shape of food and good stuff to gnaw at. The risk of vermin infestation has to be assessed in terms of the likely use of the building in question. But remember that sanitary inspectors have had bitter experience of vermin infestation in old houses built in bygone days when it was the custom to box in all the plumbing; and (*c*) delay in detection of any plumbing defects, such as leakage of foul air or foul liquids from soil and waste pipes and water from water supply systems. Delay in spotting defects may aggravate considerably the damage and sanitary nuisance or danger to health. In this connection note the advantage of concealing plumbing pipes within cupboards which will be opened from time to time instead of fixing them behind screwed-up partitions or building them in.

Recommendations. Every effort should be made to conceal plumbing pipes, but in low-cost housing this should preferably be done by running the pipes through cupboards, as far as practicable, instead of behind screwed-up panels. There is obviously a good case for complete concealment of pipes in large buildings, e.g. hotels, because the objections as to cost and the risk of vermin infestation have not the same weight, and there is more prospect of periodic inspection. In addition, it is easier in such buildings to achieve a more compact plumbing layout, which makes the concealment of pipes within ducts more practicable. Once again it is a matter of balancing "for" with "against" according to the type of building.

Taps Supplied from Main or Cistern

Introduction. In domestic plumbing the taps to consider are the cold water taps to the baths, basins, sinks and flushing cisterns, and the hot water taps to the baths, basins and sinks. In practically all districts in this country the cold tap to the sink is on the mains, and in districts where water is plentiful we often find the bath, basin and flushing cistern on the mains as well. As for the hot supplies, it is normal practice in this country to feed the hot water storage tank, which supplies the hot taps, from the cold water storage cistern. The questions at issue are: Why not connect cold taps in all cases to the rising main, and why not have mains supply direct to the hot water system?

The arguments "for." Firstly, it would obviously save in pipe runs and cisterns to take all cold services off the rising main. Secondly, it would eliminate any possibility of contamination of cistern water.

The arguments "against." In many areas, e.g. London, limited water supplies make it essential to use cold water storage cisterns for reserve purposes. Without them many buildings would lack water at times of peak demand. It follows that most cold taps must be fed from the cistern, leaving the cold tap at the sink to provide mains water for drinking. Another reason for distributing most of the water at cistern pressure in water-short areas is that there is less wastage of water from leaking taps on low-pressure supply.

You may not be very satisfied with these explanations and feel that we should not be so short of water in this rain-swept country. The answer lies with the Ministry of Health and the water undertakings, and when you have heard all they have to say you are less inclined to "shoot the man at the piano." There is plenty of action going on towards getting more water, but it is a long and expensive business—not only to

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get more raw water but to treat it and to distribute it through underground pipes in already built-up areas.

On the question of putting hot water tanks on the mains one should notice that if this is done the usual expansion pipe has to be omitted and, in consequence, the risk of a tank bursting under steam pressure becomes greater.

Cistern-fed fittings, especially ball-valves, are usually quieter than those fed from mains, although one day we hope that fittings will be developed which will be practically silent at all pressures.

If back-siphonage should occur on a piping system any pollution drawn in thereby is more widely spread when all the taps are on the mains.

Recommendations. No change in existing practice in this country while the present conditions obtain.

All-in Prefabrication

Introduction. By the title "All-in Prefabrication" I refer to various ideas, not so popular now as a year or two ago, for bringing the plumbing into the building in "one big box-of-tricks."

The arguments "for." It seems a tidy way of doing it and removes all plumbing to the workshop.

The arguments "against." The cost of "all-in" prefabricated plumbing seems, on the face of it, to compare unfavourably with more conventional methods of installing plumbing, when one takes account of the cost of framing the assembly for support in transit and transporting the heavy and bulky unit to the job and handling it into place. There is also likely to be some restriction in planning, because of the rigid control which the "all-in" unit tends to exercise over the location of the plumbing appliances in the building.

Recommendations. When there is a good case for prefabricated plumbing, use the partially-prefabricated method, i.e., site assembly of specially prepared shop-made units of a size convenient to handle.

Plumbing Layout

Introduction. My intention under this heading is to present to you the plight of the plumbing designer when the architect marks in the plumbing appliances on the building plan without proper regard as to how the pipes will have to run to join up the appliances to the water supply and to the drainage system. In this connection we shall discuss the location of baths, linen cupboards, sinks, pipe ducts and cold water storage cisterns. We shall also think about the position of ventilators relative to plumbing pipes and fittings. And, finally, we shall consider the effect of general planning of buildings on the layout of the drains.

The arguments "for," i.e., for the practice of "leaving it to the plumber." The advantages are freedom in general design and in the allotment of space for the various purposes. I do not put up this argument for the pleasure of trying to knock it down. I have every sympathy for the architect faced with his difficult task of trying to get everything perfect at once.

The arguments "against," i.e., against the practice of not taking full account of the plumbing problems in the general design of buildings. I will put the following points, under their appropriate headings:—

Baths. If you locate the tap end of a bath against an external wall it creates difficulties of access for the plumber and a possible frost hazard.

General note on access. Poor access for the plumber means more costly installation and, perhaps, inferior work because of the added difficulties. Similarly it adds to maintenance costs; and note that a job made more difficult to do is more likely to need maintenance.

Sinks. In specifying sinks with pillar taps consideration should be given to access to the back-nuts of these taps; and when sinks are on an external wall note that if water pipes are to be fixed to this wall the frost hazard needs watching.

Linen cupboards. When marking the outline of a linen cupboard on the plan, careful thought is needed to make sure that it can properly contain any plumbing components which may have to be installed within it, e.g., a hot-water tank, and perhaps a cold-water storage cistern, and the pipes thereto. The size of the hot-water tank is controlled by the needs of the building, and the user will suffer if the tank is too small. The size of a cold-water storage cistern has to be such as to satisfy the water undertaking. The space around the tank and cistern within the cupboard needs considering in the light of the amount of room required to accommodate bends, T-s and stop valves and to give the plumber proper access for making connections and fixings. It must be remembered, too, that one may not have complete freedom as to where one connects the pipes to the tank and cistern; the new British Standards for tanks and cisterns specify the correct positions for these connections. So we see that it is difficult to decide upon the correct minimum size of your linen cupboard, if it has to contain plumbing components, without studying the plumbing requirements rather carefully.

Pipe ducts. I have known vertical ducts to be sited on the building plan in the hope that most of the plumbing pipes can be run within them. Perhaps I am being too simple in pointing out that this cannot be done unless the appliances are very closely grouped around the duct and, in any case, there must be some horizontal runs which cannot be within the duct.

A special point which seems worth mentioning relates to rising mains. You may have in your plan a vertical duct located fairly centrally in the building and have an idea of carrying up the rising main within it, perhaps as a protection against frost. If so, note that if there is a long horizontal run of service pipe within the building, under the ground floor, to reach the duct, there may be a problem of access to this horizontal pipe in the event of leakage.

Cold-water storage cistern in the roof space. I do not regard the roof space as a very good place for a cold-water storage cistern, though I recognise the temptation to put it there. If, however, this location for it is chosen, note the need to consider whether sufficient space has been allowed for the cistern and the pipes; whether any of the pipes would have to run too close to the under-roof surface; and whether the cost for adequate protection against frost is not being made excessive by putting the cistern in the roof space. This is too often ignored when the cost of putting it somewhere else is weighed up.

Ventilators. Note the frost hazard when ventilators in a w.c. compartment are in close proximity to the flushing cistern and the supply pipes which must run to it. Consider also the same kind of problem in other parts of the building, where it may be easier to change the position of the ventilator than the plumbing pipes.

Drainage. A building plan may be such as to necessitate long runs of underground drainage pipes, and perhaps several manholes, to get round to the correct position for running to the sewer. Such a plan may not only add appreciably to the cost of the drainage system but may also reduce its efficiency.

Recommendations. I do not need to tell my present audience that planning has to be a rational balance of many requirements, so that it can only at best be a compromise. But I suggest that architects might sometimes more deliberately include plumbing and drainage in their long list of considerations when planning and designing buildings.

REOPENING OF BATTERSEA BRIDGE

Repairs Completed

THE Chief Engineer of the London County Council stated early this week that, unless exceptional weather conditions intervened, Battersea Bridge would be reopened to traffic on January 17. Battersea Bridge has been closed to all vehicular traffic since the night of March 16 last, when the collier "John Hopkinson" was in collision with the centre span of the bridge. Considerable damage resulted to the bridge at both ends of the centre span and five of the main cast-iron ribs supporting the span were so severely fractured that great care had to be exercised to avoid the possibility of a complete collapse of the span, which is 177 ft. long. Before the damaged structure could be interfered with, it had to be supported from beneath by timber pile stagings erected in the river; but in order to maintain the essential navigational facilities for the colliers supplying London's power stations up-stream of Battersea Bridge, the restriction of the water-way had to be kept to a minimum, and, consequently, it was necessary to work at one end of the span only at a time.

In order not to reduce the strength of the bridge more than was absolutely necessary, only one rib at a time was dismantled and replaced with new castings, the manufacture of which could only take place after extremely accurate measurements had been taken on the bridge. As each new rib was placed in position, it was prestressed to a load of 200 tons, which not only had the effect of relieving the remaining damaged ribs of the large extra load they were carrying, but also tended to distribute the load over all the ribs. The cost of repairing the damage is estimated at £35,000.

To prevent the dislocation of traffic at a later date, the opportunity has been taken, while the bridge has been closed, to remove the tram-tracks and to reinstate the carriageway. Electricity supply cables have also been laid beneath the footways and an improved lighting system will shortly be installed. Previous lighting had been by gas. Work on footways will be completed in a week or two. Now that the work of repair has been completed, the bridge has been restored to its original strength.

BUILDING INDUSTRY ORGANISATION

3.—Income Tax and P.A.Y.E.

[From a Correspondent]

THE earlier articles in this series have emphasised the finding of the Girdwood Committee that present-day house-building is costing too much; they have claimed that this is due particularly to two causes, namely: (a) concentration upon building by local authorities, and (b) unnecessarily luxurious accommodation standards. There are, of course, other factors which keep prices high. One of the more obvious is the practice of issuing building licences to the prospective owner: this results in the houses being built as individual units or in a pair or two pairs at a time. These small uneconomic units do not attract the organised house-building industry. Many of the houses being built to-day by private enterprise are, in fact, being built by individual small builders who have never before operated commercially. They are trying their hands out as master men, too often unfortunately at the expense of their customers. Some of them are acquiring their experience bitterly, but this fact does not condemn private enterprise: it merely condemns the practice which makes it virtually impossible for a single firm to build sufficient houses to get the best benefit from their organising skill.

Even if there were a fairly full return to freedom there are other difficulties to overcome. Perhaps the most important arise from a suspicion on the part of the organised labour that it is not being adequately remunerated; this suspicion is linked with a fear that the builders are making too large profits. Although we may not sympathise with these fears they are quite understandable. One of the main comments of the Working Party Report was that the change over to payment-by-results was too slow and half-hearted. The blame for this is placed at the door of the operatives' leaders no less than the builders; traditionally building trades unions have been opposed to any form of piecework or payment by results. For 25 years the industry was kept on an even keel, without strikes or lockouts; hourly wage rates were adjusted to meet fluctuations in the cost of living; there was a gradual up-grading of the backward areas towards the top (A) grade. Industrial relations in the building trades could be described as amicable during the whole of that period. Naturally, anything which threatens to upset such a satisfactory state of affairs is viewed with suspicion by the leaders—both masters and men—who have every reason to congratulate themselves on the efficiency of the machinery which they have created for the settlement of wages and working conditions and avoidance of disputes.

Now, while it is true that wages have been determined for a quarter of a century on an hourly basis, this is not to say that payment by other means, related to output and giving a considerable benefit to the speedy and steady worker, have been unknown. It might not, perhaps, be going too far to say that in the specialised house-building industry in some parts of the country such methods were the rule rather than the exception. Although, generally speaking, they were anathema to the contracting side of the industry, there were many exceptions, particularly in the case of men on key operations whose output set the pace for the general run of men on a contract. Both employers and operatives did well out of these deviations from the standard wage rate as nationally prescribed. Paradoxically, these incentive schemes were only possible because there was a well-established standard to which they could be related. The very effectiveness of the National Joint Council machinery made possible the easy agreement of incentive schemes to meet the peculiarities of any given operation or site. Where the work was of a repetitive character, as in house-building, the pre-war tendency was towards the extension of incentive payments. One might, therefore, ask why any difficulty should be experienced in extending such methods to-day, particularly to house-building.

It is not easy to answer this question, although one might comment on some of the factors which make the situation to-day different from that which prevailed before the war. The greatest difference probably arises from the changeover from private enterprise house-building to contracting. In the case of the commercial builder who organised and controlled his work from the planning to the handing over of the key interruptions in the even flow of the work were unusual. When difficulties and delays arose in the supply of certain materials—and everyone associated with the building industry knows that these difficulties arise with an appalling frequency—alternatives were quickly chosen and secured and such changes made in the work as enabled it to proceed smoothly and evenly. There was no architect or building owner or Housing Committee to consult. Things are greatly different on a contract; when the contractor foresees impending trouble, he experiences, as a rule, the greatest difficulty in persuading the local authority of the facts. Delays occur which often cause him to lose the opportunity of obtaining suitable substitutes and this causes further delay. In fixing incentive targets for contract work, either account must be taken of the delays than can be confidently anticipated, or the target must be based so low as to defeat its object.

Another great difficulty, the effect of which it is almost impossible to estimate, arises from the high rate of income-tax and P.A.Y.E. Not only have the majority of workers been brought within the income-tax range for the first time in their lives; the collection is immediate and related to current earnings. A man can, therefore, see that by working too hard he puts himself in the position of earning an extra £1 but receives only 11s. Even if one credited every worker with the highest sense of patriotism and social justice, it must be appreciated that the psychological effect of this immediate high tax reacts against improved production.

The Productivity Team found that the American approach to the subject of wages was entirely different from ours. There, they have no incentive payments; instead the worker is assured of a high standard of living. Everyone in the industry desires to see the British building trade worker assured of a high standard of living. The average worker is taxed no more than he receives back in food subsidies and other social benefits. He notices the tax, but he does not notice the subsidies. Would it not be a better policy if the Government were to reduce income-tax, particularly by raising the tax-free and reduced-rate limits, at the same time abolishing food and rent subsidies and letting the workman stand on his own feet?

(To be concluded)

DEVELOPMENT CHARGE EXEMPTIONS

[By a Legal Correspondent]

AMONG the many Regulations and Orders which the Minister of Town and Country Planning is authorised to make are Regulations under Section 69 of the Act of 1947 exempting certain operations and uses from the payment of development charge. In accordance with this power, the Minister in 1948 issued Regulations entitled "Town and Country Planning (Development Charge Exemptions) Regulations," freeing some 18 uses and operations from liability to development charge.

Last year new regulations were issued under which a wider range of uses and operations were freed from this liability. For instance, the 1948 Regulations permitted the rebuilding or enlargement of certain buildings provided the cubic content was not increased by more than 1/10th or 1,750 cubic feet, whichever was the greater. Under the 1950 Regulations the figure of 1,750 cubic feet has been increased to 7,500.

The question naturally arose as to whether the Central Land Board would repay any development charges paid in respect of operations subsequently freed by the 1950 Regulations. The Lord Chancellor, replying to a question in the House of Lords on December 13, 1950, announced that no repayments would be made in such cases. While the answer will no doubt give rise to disappointment, it is surely the only reasonable course. The repayment of development charges on this ground could give rise to endless complications, and even injustice in certain cases.

If development charges were to be repaid on the ground that the operations had subsequently been exempted by the new Regulations, then it would only be fair and logical to repay development charges in respect of operations which were subsequently declared not to be development at all by virtue of the Town and Country Planning (Use Classes) Order, 1950. Moreover, the relaxations in the development charge system made by the 1950 Exemptions Regulations, and by the new Use Classes Order, may, on some future occasion, be withdrawn. If charges were repaid now the question might then arise as to whether the charge should not be paid in respect of operations now free from that liability. The result would, of course, be chaos.

It should also be remembered that the purpose of the development charge system is to secure the buying and selling of land and buildings at existing use value. Although it is notorious that land is being bought and sold in excess of this value, there must be many cases in which land has passed for less than its market value for development because of the liability to development charge. If development charges were now to be repaid it would only be equitable in those cases that part or all of the repayment should be passed on to the vendor.

PRACTICE NOTES

Daywork Charges

THE Joint Contracts Tribunal, which is representative of the R.I.B.A., R.I.C.S. and the N.F.B.T.E., has issued the latest Practice Notes (Nos. 23 and 24) (D.50. 509 and 510) as follows:—

Practice Note 23.—The opinion of the Tribunal was asked as to whether in contracts current on June 1, 1950, in which no rates for daywork were mentioned or inserted in the bills of quantities, dayworks carried out after that date should be charged in accordance with the National Schedule of Daywork Charges authorised by agreement between the Royal Institution of Chartered Surveyors and the National Federation of Building Trades Employers in 1933 or with the similarly authorised revised National Schedules which came into operation from June 1, 1950.

It was generally accepted by the Tribunal as the intention that dayworks carried out after June 1, 1950, in connection with a current contract under R.I.B.A. conditions should be chargeable in accordance with the revised National Schedule of Daywork Charges Part 1. While this was the intention and perhaps the proper interpretation of the contract, it was recognised that in law the point might not be free from doubt.

The question was therefore one upon which the Tribunal were not prepared to express an opinion, in the nature of a ruling, but it was felt that this statement by the Tribunal of what was accepted to be the intention when the revised National Schedules of Daywork Charges were stated "to operate from the 1st June, 1950" would be of assistance to all sections of the industry.

Practice Note 24.—The Tribunal have considered it desirable to supplement the opinion expressed in Practice Note 19 regarding the cash discount reserved to the contractor upon goods supplied by a nominated supplier under clause 22 of the R.I.B.A. Standard Form of Contract by this note upon the cash discount reserved to the contractor upon materials supplied and fixed or work executed on the site by nominated sub-contractors under clause 21.

While the certificate of the architect is not a condition precedent to the right of a nominated supplier to receive payment for goods supplied, it is agreed between the employer and the contractor in clause 21(b) that payment of a nominated sub-contractor is to be made by the contractor within 14 days of receiving from the architect a certificate including the value of such nominated sub-contractor's work, materials or goods less only (i) any retention money which the contractor may be entitled to deduct, and (ii) a cash discount of 2½ per cent.

Unless, therefore, there were any special arrangement between the contractor and a nominated sub-contractor whereby it was agreed that payment for the sub-contract works should be made in a manner different to that provided in clause 21(b), it would be the view of the Tribunal that the certificate of the architect is a condition precedent to the payment of a nominated sub-contractor and from any amounts so certified the contractor is entitled to make the deductions provided for in that clause. If therefore a sub-contractor, who had accepted nomination under clause 21, failed to provide in the sub-contract sum for the discount reserved to the contractor under his contract with the employer, the contractor would not thereby be precluded from making the authorised deductions from any amounts certified as due in respect of the sub-contract works.

It was the opinion of the Tribunal that the architect as a matter of regular practice in all invitations to proposed nominated sub-contractors should call attention to the provisions of clause 21(b) which sets out the agreement between the employer and contractor as to the manner in which payments to nominated sub-contractors shall be made.

BUILDING WAGES

Sliding Scale Increase

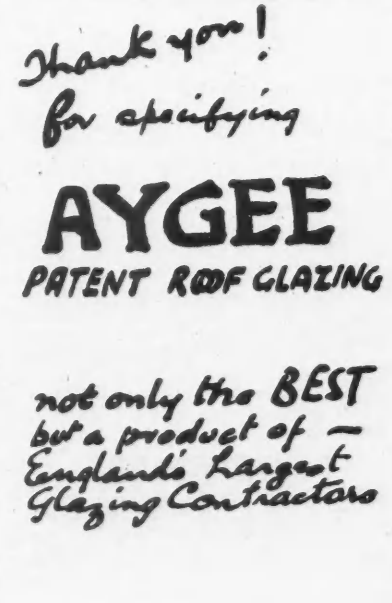
THE National Joint Council for the Building Industry on January 11 agreed to record, and issue to its constituents, the Settlement recently prepared by the executives on the subject of Incentive Payments in the Building Industry. It also conducted the usual annual review under the cost-of-living clause in its Wages Agreement and decided that, in accordance with the sliding scale in that clause, a general increase of ½d. per hour is due to be operated from February 5 next.

After dealing with matters arising from Committee Reports the Council then proceeded to hear evidence on a number of proposals submitted from both sides of the industry. These included the operatives' application for a general wage increase of 6d. per hour and an employers' notice in favour of longer weekly working hours in those districts not already operating 46½ hours per week.

After considering the evidence the Council adjourned to enable two Committees (to report within a month) to examine the possibilities of reaching settlement on the proposals, but decided, on the spot, to increase the remuneration of Watchmen from 15s. to 16s. per shift in London and from 13s. to 14s. elsewhere.

Road Research Technical Paper

Road Research Technical Paper No. 21 "The Investigation of Road Foundation Failures," was published on January 16.



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EXHIBITION STAND ERECTION

Agreement with Unions

FOLLOWING disputes in recent times in the matter of exhibition stand erection (as a result of which several major exhibitions were held up), a number of leading London exhibition contractors joined the L.M.B.A. and invoked National Federation assistance. As a result, the Federation held several meetings with the unions, the negotiations being directed towards securing the essential principles of the National Joint Council Agreement while also meeting, as far as possible, the special needs associated with the preparation and dismantling of stands at recognised exhibition halls. As a result, a new form of agreement has been reached and, having been approved by the executives concerned, was signed and operated "as from December 10 last." The employer signatories were the N.F.B.T.E., to which the Exhibition Contractors are now affiliated, the Association of Exhibition Contractors and the Exhibition Manufacturers' Association. The operative signatories were the N.F.B.T.O., the Amalgamated Society of Woodworkers, and the Society of House and Ship Painters.

The Main Effects

(1) The Working Rules contained in the agreement apply to "the operations of construction, assembly, erection and dismantling of temporary exhibition stands and similar temporary structures at halls where exhibitions are held, as regularly set out in the List of Exhibitions and Fairs in the *Board of Trade Journal*, together with such others as may be jointly agreed by the national parties, and to work done in shops as part of the same operations."

(2) The wage rates and normal working hours are those prescribed by the N.J.C. for the building industry.

(3) There is one compounded daily payment instead of extra payments under National Working Rule 3 (height money, dirt money, spray money, etc.) which are most difficult to operate on exhibition work.

(4) There are special overtime arrangements (not involving permits from the Local Overtime Committee), but overtime rates are the same.

(5) The provisions for terminating employment are, in the case of shops, the same as under the N.J.C.B.I. (Working Rule 2B), but special arrangements will operate in the circumstances of sudden short spurts at exhibition halls.

(6) For travelling (other than daily) and also for lodgings, the arrangements are generally as under National Working Rule 6B. For daily travelling the Building Industry Rules apply, including the special daily travelling arrangements in London, Manchester, Birmingham and Liverpool, but at exhibitions in other parts of the country employers can, at their option, operate either the walking-time scale of the locality or a commuted scale of payment (at plain-time rates).

(7) Disputes are to be dealt with by Green Book measures but, having regard to the shortness of time spent on each exhibition project, these will be operated at site-level and national level only.

Any members interested in exhibition stand erection can obtain a copy of the actual terms through the Regional Employers' secretary.

CO-OPERATION IN SCHOOL BUILDING

The Architect's Task

MR. GEORGE TOMLINSON, the Minister of Education, opening Whitmore Park Primary School, Coventry, on January 10, said: "It is no good saying to an architect 'put up a school here for 500 children' and expecting to get a building which will really meet the needs of the children and their teachers. If the school building is going to play the part it should play in the education of the children, if it is to provide the right sort of environment to foster the growth of humane, sensitive, active and healthy young people, then the educator and the architect have to work together over a long period. The architect has to learn a good deal about how children think and behave, and how a school functions. The education officer has to understand something of the architect's problems and his approach to solving them.

"The architect in his turn has to serve as the link between the education service and the vast complex of industries which supplies the materials and components and the building industry which eventually assembles them all in the finished state.

"In some ways, the architect has the most difficult job of all in this field. For one thing, conditions for building since the war have been, as we all know, exceptionally difficult—perhaps more difficult than they have ever been. And many of these difficulties are certain to remain with us for a long time yet. But, above all, in tackling a factory-made job like this school, the architect has to strike out in a comparatively new field. He has to become something of an industrial designer.

"All this faces the architect with a relatively new set of problems; it makes it essential that there should be the same degree of co-operation between him and the industrial designer and factory manager as between him and the education officer.

"So there are many different contributions which have to be made to the building of a school such as this. Teacher, administrator, architect, designer, factory manager, contractor, workmen on the site and in the factory—all these and others have to work together.

"Mr. Churchill made one of his memorable remarks once when he said 'We shape our buildings and afterwards our buildings shape us.' I believe this is true of buildings used mainly by grown-ups. It is true in a more immediate and effective sense of buildings which will be used for long periods by children. No one who has any real understanding of children's minds will doubt the influence of their environment on their development.

"When we are building a school, we are doing something that will influence thousands of children for good or ill over a long period of years. So it matters a lot whether we build schools that are as good as they can be in their important features. I hope that in Coventry, as in other areas, close and effective collaboration will continue to be the order of the day, and that, in spite of all the difficulties and shortages which will inevitably continue for some time, you will find ways of building, quickly and at a cost the nation can afford, good schools which will help to shape good citizens for the future."

SUPERVISORY BUILDING STAFFS

New Advisory Leaflets

BOTH the Building Industry Working Party and the Anglo-American Productivity Team strongly recommend the greater use of costing and programming in the execution of building work, as means of improving output and reducing costs. Following these recommendations, the National Federation of Building Trades Employers, in consultation with the Ministry of Works, is preparing full guidance on various aspects of costing. In the meantime, the Ministry of Works has issued two Advisory Leaflets, Nos. 13 and 14, introducing these subjects.

Introduction to Site Costing for Builders, No. 13 in the Ministry of Works series of Advisory Leaflets, has been prepared in response to a demand for a simple guide to site recording systems: the leaflet is designed to interest contractors and their supervisory staffs in operational or unit costs, and is, therefore, primarily concerned with labour output and costs.

Advisory Leaflet No. 14, *Introduction to Programming and Progressing for Builders*, explains how programming and progressing can ease the supervision of building projects. It is a companion leaflet to No. 13 and the two should be read together. Leaflet No. 14 will be of interest to the architect, the builder and the foreman. It gives examples of the use of programming and progressing as aids to cheaper building—from a simple progress record to a comprehensive programme for the estimation and progressing of labour, material and plant requirements.

Copies of the two new leaflets, and back copies dealing with other subjects, are obtainable from H.M. Stationery Office (Post Orders to P.O. Box No. 569, London, S.E.1.), price 2d. each (3d., post free). Special prices are quoted for quantities.

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METAL SHORTAGES

Ministry to Allow Some Easing of Prohibition Order

THE Ministry of Supply and Board of Trade have received representations from several of the industries affected by the proposed prohibition of the use of copper and zinc in the manufacture of specified articles. Careful consideration has been given to these representations and in particular to the anxiety expressed that the early enforcement of the prohibitions would cause serious dislocation for many firms and in some cases cessation of production.

The prohibitions (state the Ministry) are unavoidable in view of the world shortage of these metals and the urgent need to ensure that the available supplies are used for essential purposes, including the fulfilment of the defence programme. In order, however, to minimise to the greatest extent possible these difficulties to the industries affected, the Ministers concerned have decided:

(a) that the prohibition Order shall come into force on March 1 instead of February 1 as previously announced;

(b) to include in the Order permission to firms to use, between March 1 and June 30, any stocks of semi-fabricated metal and partly processed articles in their possession on March 1.

Midlands Deputation

ON January 10, representatives of the Birmingham Chamber of Commerce discussed with the Ministry of Supply and Board of Trade the effect on Midlands industry of the Ministry's proposal to prohibit the use of copper, zinc and brass in the manufacture of certain products. The following points were made:

1. The potentialities in respect of rearmament of the quite considerable number of manufacturers concerned are important.

2. The impact upon exports. Many of the firms most hit are big exporters.

3. It seems desirable in the national interest that the productive capacity set free by whatever measures are ultimately found necessary should receive special attention.

4. The practicability of the substitution of other available materials is very limited.

5. The manufacturers affected will in most cases have limited stocks of restricted materials. They will also have work in progress.

Can these be used after February 1?

In reply, representatives of the Ministry of Supply and Board of Trade emphasised the extreme difficulties of supply of copper and zinc. It would be indefensible to allow raw material to be used for production which is clearly inessential at a time when vital production is held up by shortages. The Departments undertook to take into consideration the points made by the deputation. They did not feel that the date of the prohibition could be postponed. But they would consider allowing firms to use up reasonable stocks of materials and partly fabricated work in progress at the end of January. The Departmental representatives were not in a position to indicate what Government policy would be on the regulation of imports and exports of the products in question; these matters were being urgently considered.

INQUIRY BUREAU

Failure of Quarry Tile Floors

I HAVE JUST READ with interest in your issue for December 15 of your correspondent's experience regarding the lifting of quarry tiles in a kitchen floor. I recollect that a similar type of failure took place in a large block of flats in the West End about two years after the building was complete. In this case they were 4 in. by 4 in. tesselated tiles with a key pattern on the reverse side. I do not think this failure has anything to do with the tiles themselves, but is caused by some form of unequal shrinkage or expansion and occurs where the mass of tiles is tightly held on all edges.

The trouble was quickly and economically put right as follows:—

(1) Remove the tiles and lay out elsewhere in the order in which they were laid, first cleaning the edges of the tiles.

(2) Sweep the screed clean and paint over with a fairly generous coat of one of the proprietary brands of asphaltic solutions used for coating and turnerising old zinc on asphalt flats.

(3) Dip the underside of each cleaned tile in similar solution and relay on its original bed.

It will be found that the tiles will fit back perfectly without any cutting or easing and will give no more trouble.

T. MCSWINEY.

WAR DAMAGE PAYMENTS

Commission's Work in 1950

THE War Damage Commission paid out £92 million during 1950, £13 million less than in 1949. A total of £947¼ million, in 4,140,000 separate payments, has been reached since the Commission began paying out in 1941. Contributions by property owners totalled £198 million. Claims paid for "cost of works" repairs during the year numbered 290,000, and there were 47,000 payments on account. The amount involved was £76 million, of which £73 million was paid to private owners, and the rest to local and other public authorities. About two-thirds of this sum was for the repair and rebuilding of houses.

Other principal items were: commercial buildings, £7½ million; factories, £7 million; shops, £2¼ million; churches, £2¼ million. Value payments for "total loss" properties amounted to £16 million, of which £4¼ million related to houses. Greater London's share of the year's total was £60 million. During the last three months payments were made at an average of £1,600,000 per week. The number of cases where owners sent specifications of proposed repairs to the Commission for agreement before beginning the work was 172,000 during the year.

BUILDING MATERIALS

Rise in 1950 Price Indices

THE Board of Trade wholesale price indices for building materials in 1950 are as follows:—

	1949		
Dec.	... ...	225.2	
	1950		
Jan.	... ...	226.2	
Feb.	... ...	226.8	
March	... ...	225.6	
April	... ...	223.8	
May	... ...	227.2	
June	... ...	229.1	
July	... ...	230.7	
Aug.	... ...	232.5	
Sept.	... ...	236.3	
Oct.	... ...	236.9	
Nov.	... ...	238.0	
Dec.	... ...	237.7	

NEW COMPANIES

THE FOLLOWING NEW COMPANIES registered in England have been announced by Jordan and Sons, Ltd., company registration agents:

Brind and Co., Ltd. (489601.) Regd. Dec. 20, 7a, Market-pl., St. Albans, bldrs., bricklayers, etc. Nom. cap.: £500. Dirs.: W. C. J. Brind and Florence A. B. Brind, Chantry Cottage, Hatfield, Herts.

Ladbrook (Harrow), Ltd. (489588.) Regd. Dec. 19, 107, Hindes-rd., Harrow, Mddx., bldrs., contractors and decorators, etc. Nom. cap.: £1,000. Dirs.: C. G. Ladbrook and Mrs. H. J. Ladbrook, 72, Imperial-dr., North Harrow, Mddx.

R. Miller (Developments), Ltd. (489597.) Regd. Dec. 19, 17, Bathurst-gdns., Kensal Rise, N.W.10, bldrs., decorators and contractors, etc. Nom. cap.: £100. Dir.: R. Miller, 15, Bathurst-gdns., Kensal Rise, N.W.10.

H. Sowden and Co., Ltd. (489612.) Regd. Dec. 20, 32, Guthlaxton-st., Leicester, bldrs. and contractors, plumbers and mchts. Nom. cap.: £5,000. Dir.: H. H. Sowden, 32, Guthlaxton-st., Leicester.

J. C. W. Catley and Co., Ltd. (489615.) Reg. Dec. 20, Selby Works, Selby-rd., Leytonstone, E.11, bldrs., bricklayers, etc. Nom. cap.: £5,000. Dir.: C. C. Catley, Milestones, Birchington, Kent.

J. Lampitt and Sons, Ltd. (489701.) Reg. Dec. 21, 42, Albert-rd., Worcester, bldrs. and decorators. Nom. cap. : £4,000. Dir. : J. Lampitt, 15, Camp Hill-rd., Worcester.

E. Lofts and Son, Ltd. (489668.) Regd. Dec. 21, 9, Russell-rd., E.10, bldrs., etc. Nom. cap. : £100. Dirs. : J. P. Lofts and Ada M. Lofts.

H. F. N. Greenhill and Sons, Ltd. (489688.) Regd. Dec. 21, 12, Winterstoke-rd., Bristol, 3, bldrs. and contractors, etc. Nom. cap. : £100. Dir. : H. F. N. Greenhill, Gotley Lodge, Brislington, Bristol, 4.

House Fitters, Ltd. (489690.) Regd. Dec. 21, 41, Middle-st., Brighton, Sussex, bldr. Nom. cap. : £2,000. Dirs. : D. W. Green and Pauline J. Green, 28, Reynolds-rd., Hove, Sussex.

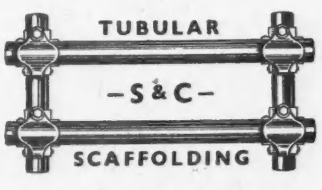
Funnell, Smith, and Beswell, Ltd. (489757.) Regd. Dec. 22, 29/30, High Holborn, W.C.1, bldrs., bricklayers, etc. Nom. cap. : £2,000. Dir. : R. Funnell, 71, Sandleigh-rd., Leigh-on-Sea.

Payne and Hunnisett, Ltd. (489719.) Regd. Dec. 21, North-st., Biddenden, Kent, bldrs., etc. Nom. cap. : £2,000. Dir. : A. W. Jupp, Little Combe, Coombe-la., Westbury-on-Trym, Bristol, 9.

Cripwell and Shaw, Ltd. (489750.) Regd. Dec. 22, Bradford-rd., Stanningley, bldrs., contractors, etc. Nom. cap. : £10,000. Dir. : J. E. Cripwell, 49, Rodley-la., Rodley, Leeds.

Lewis and Smith (Contractors), Ltd. (489768.) Regd. Dec. 22, Victoria Hse., High-st., Barkingside, Essex, bldrs., contractors, etc. Nom. cap. : £5,000. Dir. : A. E. Lewis, 113, Berkeley-av., Barkingside.

Having Secured the Contract— what about the Steel Scaffolding?



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BUILDING FOREMANSHIP

Training for Efficiency

THE City of Gloucester Technical College made local history on January 10 with the inaugural lecture of a series which has been arranged for the training of general foremen in the building industry. The principal, Mr. R. S. Reed, M.Sc., M.I.Mech.E., was in the chair, and nearly every building firm in the city and district sent representatives to the meeting.

After Mr. E. Hughes-Jones, B.Sc. (Econ.), F.R.Econ.S., Regional Director of the Ministry of Works, had addressed the meeting a talk was given by MR. D. E. WOODBINE PARISH, F.I.O.B., Chairman of the National Standing Committee for the Training of General Foremen. He spoke of the place held by the building foreman to-day and said that it was the foreman who either made or marred the work in hand. This being the case, it was essential that his training should be such as to make him thoroughly efficient in all aspects of his work. In the past this problem had for too long been neglected, but, as was the case in Gloucester, it was now being tackled with vigour in many parts of the country. All sections of the industry were agreed on the importance of proper training for building foremen and Great Britain was now leading other countries in the opportunities it offered in this direction.

Mr. Woodbine Parish went on to describe the qualities which went to make the ideal foreman. "They include," he said, "not only a high standard of moral integrity and impartiality, and a sound practical and theoretical knowledge of building construction, but also the ability to organise the work on the site to the best advantage and to exercise the best principles of leadership and man management."

NATIONAL BUILDING STUDIES

Title Change for Technical Papers

[From a Correspondent]

THE National Building Studies are divided into three series—Bulletins, Special Reports and Technical Papers. There has been some indication that the Technical Papers are being purchased under the misapprehension that they deal with matters of immediate and direct interest to the builder. They are not intended for the building industry in general, for most of the material they contain is of interest only to those engaged on research and development work.

To emphasise the different nature of the Technical Papers, as compared with the Bulletins and Special Reports, the series is now being renamed "Research Papers." As the existing Technical Papers are reprinted they will be renamed "Research Papers." Technical Papers already published are:—No. 1, A Work Study in Blocklaying (Building Research Station); No. 2, A Survey of Noise in British Homes (Building Research Station); No. 3, Investigations on Granulated Blastfurnace Slags for the Manufacture of Portland Blastfurnace Cement (Building Research Station); No. 4, Investigation on Building Fires (Building Research Station)—Part I—Estimation of Maximum Temperatures, and Part II—Colour Changes in Concrete; No. 5, Investigation on Building Fires (Building Research Station—Part III—Radiation from Building Fires); No. 8, The Analysis of Concretes (Building Research Station); No. 9, Test Walls for Assessing Construction Times with New Building Blocks.

ANGLO-CANADIAN TRADE

New Trade Promotion Centre in Toronto

THE Dollar-Sterling Trade Board is to suspend its operations and be re-constituted in a new, enlarged organisation of an advisory character to carry forward the longer term aspects of the Board's work. This announcement was made in Toronto on January 8 by Mr. J. S. Duncan, Chairman of the Board. The new joint organisation, known as the Dollar-Sterling Trade Advisory Council, is made up of both United Kingdom and Canadian members and will combine the efforts of three agencies which have hitherto been working for the furtherance of United Kingdom/Canadian trade. These are the Dollar-Sterling Trade Board, the Dollar Exports Board, and the Federation of British Industries in Toronto. The Chairman of the new Advisory Council is Mr. Duncan.

The United Kingdom section of the Council consists of the complete membership of the Dollar Exports Board and its Executive Committee, which will continue into 1951. Mr. P. Huffman and Mr. Geoffrey H. Ward of the Canadian Chamber of Commerce in Great Britain will join the Dollar Exports Board and Executive Commitee.

This Advisory Council, Mr. Duncan stated, apart from formulating policy in two-way trade matters from the point of view of private industry, will extend advice and assistance to two trade promotional agencies in Canada and the United Kingdom:

In Canada a new British Trade Promotion Centre will be set up in Toronto. This Centre, which will be an expansion of the existing Federation of British Industries office in Toronto, will closely resemble the Trade Centre established in New York last September, which represents the major United Kingdom exporting interests in the United States. Mr. Hugh Scully, at present Canadian Adviser to the F.B.I. Toronto Office, has joined the Dollar-Sterling Trade Advisory Council and will continue to serve as Trade Consultant to the Centre. Mr. S. C. Legge, who has been Assistant Secretary of the Dollar-Sterling Trade Board in Ottawa, has transferred to Toronto to join Mr. Hugh Scully's staff, thus providing executive continuity between the old and the new organisation. Mr. Legge will also act as secretary of the Canadian Section of the new Advisory Council.

In the United Kingdom, the Trade Promotional Agency already exists. This is the Canadian Chamber of Commerce in Great Britain, presided over by Mr. P. Huffman, and of which Mr. Geoffrey H. Ward is Secretary; he will act as secretary of the United Kingdom Section of the new Advisory Council. The British Section of the new Advisory Council will be available to assist the efforts of the Canadian Chamber in Great Britain in exactly the same way as the Canadian Section will assist the British Trade Centre in Toronto.

"EXPORTING TO CANADA"

As part of the services provided for exporters, the Board of Trade has issued a new publication entitled "Exporting to Canada" (available at H.M. Stationery Office, Kingsway, price 2s. 6d., or at any bookseller). This booklet has been compiled in the Department with the help and advice of the United Kingdom Senior Trade Commissioner in Canada, and his staff. It differs from the publications in the regular Board of Trade series of "Overseas Economic Surveys" in that it concentrates on the more immediate and practical problems which confront the exporter. It is not an attempt to teach the exporter his job. It aims to provide a brief summary of useful and relevant factual information which exporters new and old will find it handy to have available.

The booklet endeavours to offer a brief but comprehensive outline of the main features and exigencies of this market. It includes information about Canadian Government restrictions, duties, taxes, standards, specifications, and details of Canadian methods and practices in the sale and distribution of goods, credit terms offered, advertising practices and sales methods, etc. It also deals with a wide range of other miscellaneous matters of interest to the exporter, including questions of shipment freights, packaging, samples, servicing, choice of agents, use of catalogues, Canadian exhibitions and fairs, and it includes a chapter on the facilities offered by the Export Credits Guarantee Department. Whilst the booklet is by no means exhaustive, it can be regarded as a useful first guide to the exporter—particularly the exporter who is unfamiliar with the Canadian market.

OFFICIAL NOTIFICATIONS

Rationing of Sulphuric Acid and Sulphur

The Board of Trade announce that licences have been issued under the Control of Sulphuric Acid Order, 1950 (S.I. 1950, No. 2087), and the Control of Sulphur Order, 1950 (S.I. 1950, No. 2084) to consumers of crude, recovered and processed sulphur and to producers of sulphuric acid. The licences operate from January 8.

Licensing of Iron and Steel Making

After May 15 next the production of certain forms of iron and steel will be restricted to the Iron and Steel Corporation and the publicly-owned companies, except under licence or in small quantities.

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NEWS IN BRIEF

Trade Catalogues Wanted

Messrs. Sydney Webster and Partners, AA.R.I.B.A., A.M.T.P.I., will be pleased to receive trade catalogues, etc., at 83, Latymer-court, London, W.6.

Building Trade Employment

At the end of November there was an estimated decline of 10,000 in the numbers employed in building and contracting, which now stand at 1,486,000.

New Building for National College

The Ministry of Education has announced that work has commenced on a new building for the National College of Rubber Technology, on a site adjoining the Northern Polytechnic, London. The estimated cost, including equipment, is about £170,000.

£500 Houses for Scotland

At its meeting on January 8, the Angus County Housing Committee approved in principle a plan to purchase 100 Dorran £500-type houses, for use as homes for retired farm servants. The contract is subject to approval of specifications to be submitted by Mr. Tarran and authority from the Scottish Department of Health.

Engineers Appointments Bureau

Mr. J. Muil, A.M.I.E.E., who has been for the last five years with the Technical and Scientific Register of the Ministry of Labour, has been appointed Registrar and Secretary of the Professional Engineers Appointments Bureau, 9, Victoria-street, Westminster, S.W.1, with effect from January 1.

Stock Bricks Production

IN his annual report just issued, the president of the Stock Brick Manufacturers' Association, Mr. G. W. A. Miller, says that, freed from licensing of works and selling controls, outputs have been pushed to the limit of available labour and capacity. There is a ready market for all bricks, and prices have found a natural level. Quality has improved as the result of the research programme, which is still in progress. Further mechanisation will assist higher production, but there are serious delays in obtaining permissions and essential materials. The 1947 Planning Act, he says, is the greatest existing brake upon the wheels of industrial development.

A Students' Revue

The New Year Revue given by the students of the Brixton School of Building Architectural Society, on January 12, provided, as it did last year, a very good evening's entertainment. The Revue, entitled "Sticks and Stones," which took place at Ferndale-road, was produced throughout by students of the school and was again both topical and amusing. The staff, as was to be expected in a students' show, bore the brunt of a large number of the jokes, and the various Ministries and the buildings on the South Bank site were the subjects of two witty sketches. A small display of students' work on show in the building contained some very interesting exhibits, including a number of Shakespearian stage-settings. A buffet was provided and the evening's entertainment was concluded by dancing until 11 p.m.

Demonstrations of Stud Welding

Architects, builders, constructional engineers, roofing specialists and others concerned with building construction, are invited by Crompton Parkinson, Ltd., to practical demonstrations of Nelson Stud Welding, to be given at Holland & Hannen and Cubitts, Ltd., 258, Grays Inn-road, London, W.C.1, from February 19 to 23 inclusive, between 10 a.m. and 5 p.m.

Building Alliance Golfing Society

At the annual general meeting of the Building Alliance Golfing Society (formerly the Building and Allied Trades Golfing Association) the following officers were elected for the year 1951 :—Captain, V. V. Tatlock ; Hon. Secretary, David Hill ; Members of the Committee, Messrs. P. Roger, T. Reedy, H. H. Hill and R. Carra.

Fixtures for the year have been arranged as follows :—April 3, match against the Royal Institute of British Architects Golfing Society on the Royal Wimbledon course. April 12, match against the Plastic Industries Golfing Society at St. George's Hill, Weybridge. May 1, Spring meeting for the Dyke Cup at Sunningdale. July 17, Summer meeting for the "Bunter" Griffith Memorial Trophy at Moor Park. September 27, Autumn meeting for the "Builder" Trophy on the Berkshire course. On November 16, the Society's Annual Dinner will be held at the Trocadero Restaurant.

TRADE NEWS

Advertisement Correction

We are advised by John Thompson Beacon Windows, Ltd., that in a recent advertisement in *The Builder* featuring "Beacon" windows supplied to the Chloride Electrical Co., Ltd., Manchester, the name of the architect was incorrectly stated. This should have read Mr. T. Trepess.

Steel Firm's Activities

A review of the firm's activities is given in a new colour-illustrated pamphlet issued by Dorman Long and Co., Ltd., of Middlesbrough. A foreword expresses the need for higher productivity in order to meet the requirements of national defence and the call for exports. Details are also given of the firm's new steelworks being erected at Lackenby.

A Flooring Material

A new flooring material, "Alamac," which is claimed to be an improvement on wood block flooring, is being manufactured by A. M. Macdougall and Son, Ltd., 20, Renfrew-street, Glasgow, C.2. It is made from strips of wood about 1 in. to 2 in. wide, backed and bound with a special flexible adhesive. It is said to possess hard wearing qualities and is simple to lay, requiring no nailing.

Wallboard Development

C. F. Anderson and Son, Ltd., Harris Wharf, Graham-street, London, N.1, have published a brochure dealing with the development of the wallboard. It is well produced and for easy reference is divided into seven groups. These are: fibre building boards, including chipboards; asbestos boards; plasterboards, woodwool slabs and strawboards; laminated plastic boards; decorative and decorated boards; veneered boards; and accessories, fixing methods and ancillary materials. The brochure also contains notes on fixing and working the above materials.

A Service to Customers

Whilst linseed oil putty is the type most commonly used, there is a demand for a number of other types of putties and mastics for such purposes as metal windows, jointing between brickwork and window frames, aquarium uses and fixing glass wall linings. Sealanco (St. Helens), Ltd., announce that they maintain a laboratory devoted entirely to problems connected with the manufacture and uses of putty and allied products and that the services of this department are at the disposal of their customers.

A New Industrial Gloss Paint

A high duty gloss paint now being produced by Factron Products, Ltd., 14, North End-road, London, N.W.11, has been specially designed for use under severe conditions. The manufacturers claim that it will withstand direct attack by dilute acids and alkalis and they also recommend it as a protective and decorative finish in fume-laden atmospheres and other arduous industrial conditions. A full range of primers and finishing coats based on British Standard colours is available and detailed leaflets, colour cards and prices can be obtained from the manufacturers at the above address.

A Building Centre Exhibit

Warerite, Ltd., are holding an exhibition at the Building Centre showing the use of their laminated plastics in providing lining for the crew's quarters in ships, particularly in small ships. They have recently supplied a series of B.E.A. colliers with Warerite panelling, and the exhibit shows a replica of a firemen's mess and single-berthed cabin in one of these colliers. It is claimed that the complete elimination of repainting costs is the outstanding advantage which these materials offer the shipowner, the patterns and colours being an integral part of the solid plastic sheet. The surface of the material is claimed to be very hard-wearing, to stand up to the effects of oil and grease, and to be highly resistant to steam, moisture and sea air.

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THE SCOTTISH BUILDER

NEW BUILDINGS

Blantyre.—Lanarkshire C.C. are to erect at the Thornhill housing site 90 houses, etc., for which the architect is Samuel MacColl (F.), County-bldgs., Beckford-st., Hamilton.

Cambuslang.—Plans to be prepared for extensions, etc., to the Scottish Industrial Estates, Ltd., factory at the Sommervile-st. area, for which the architects are Mitchell, Johnstone & Co., 166, West George-st., Blythswood, Glasgow, W.C.2.

Glasgow.—Plans are to be prepared for new public school to be erected at Barner-rd., for which the architect is Mr. John MacNab (F.), 129, Bath-st., Glasgow, W.C.2.

Harthill.—Plans are in the hands of their own architectural staff for blocks of flats consisting of 60 houses, which the Scottish Special Housing Association, Ltd., 15-21, Palmerston-pl., West End, Edinburgh, is to erect, at Harthill Mains site.

Lesmahagow.—Plans are in hand for the second development of the housing scheme consisting of 100 houses, which the Scottish Special Housing Association, Ltd., 15-21, Palmerston-pl., West End, Edinburgh, are to erect from plans by their own staff architects.

Lochaber.—Plans are to be prepared for Catholic school on a Lochside site and for which the architect is Alexander Cullen, O.B.E., F.R.I.B.A., etc., The County-bldgs., Inverness.

Strathavon.—Plans to be prepared for scheme of 38 houses to be erected at the Goodsbush housing site and for which the architect is Mr. Samuel MacColl (A.), County-chbrs., Beckford-st., Hamilton.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JANUARY 22.

*†**Plymouth T.C.**—School, Johnston-terr. Louis de Soissons, A.R.A., & Ptnrs., 5, Portland-sq. Dep. £3 3s.

JANUARY 24.

*†**West Sussex C.C.**—12 police houses on various sites. County A., Chichester.

JANUARY 25.

*†**Medical Research Council.**—Public health laboratory, Musgrove Park Hospital, Taunton. H. H. Goldsmith (F.), 18, Gay-st., Bath. Dep. £3 3s.

*†**Surrey C.C.**—Extensions, "Kingsmead," Grove-rd., Richmond. County A., Kingston. Dep. £2 2s.

JANUARY 26.

*†**Derby C.B.**—Alterations, Christ Church school, Burton-rd., and extensions, Nightingale-rd. school. Boro' A. Dep. £2 2s. each. Tenders by February 26.

*†**Northampton C.B.**—39 houses, "Sunnyside," Harborough-rd. Boro' A. Dep. £2 2s. Tenders by February 19.

JANUARY 27.

*†**Somerset C.C.**—Five secondary modern schools and one junior school in various parts of the county. R. O. Harris (F.), County A., Taunton. Dep. £2 2s.

JANUARY 29.

***Barton-upon-Humber U.D.C.**—36 houses, Toftsrd. estate (3 contracts). J. M. Bott, C. Dep. £2 2s. each.

*†**Eton R.D.C.**—(a) Four flats, Burnham; (b) 8 blocks of 4 flats and 6 houses, Datchet; and (c) 3 shops with flats over and 9 garages, Hedgerley. Sir John Brown, A. E. Benson & Partners, architects, 117, Sloane-st., London, S.W.1. Dep. £3 3s. each.

***Uxbridge U.D.C.**—Additions to changing rooms, etc., Rockingham recreation ground. E. & S., 263, High-st.

JANUARY 30.

*†**Southampton C.B.**—War damage repairs, Western secondary and infants' schools. Boro' A. Dep. £2 2s. Tenders by March 14.

***Sunderland C.B.**—Five shops and flats, junction of Hylton-la. and Holborn-rd. Boro' A., Grange House, Stockton-rd. Dep. £2 2s.

JANUARY 31.

*†**Birmingham City.**—Messroom and public shelter, Wynford-rd. recreation ground. General Manager, Parks Dept. Dep. £2 2s.

*†**Hants C.C.**—Third instalment, Aldershot Manor Park secondary school, County A., Winchester. Dep. £3 3s.

*†**Norfolk E.C.**—Additional accommodation, Wells modern secondary school, and adaptation of buildings, Holt Hall. G. W. Oak (A.), Education Architect, Stracey-rd., Norwich. Dep. £2.

***Sunderland C.B.**—Hostel for aged persons, Teddington-av., Thorney Close estate. Boro' A., Grange House, Stockton-rd. Dep. £2 2s.

FEBRUARY 2.

***Durham C.C.**—Four pairs of police houses, Axwell Park, Swalwell. G. R. Clayton (F.), Architect to Police Authority, Durham.

***Merton and Morden U.D.C.**—Dismantling and re-erection of timber-framed building from Morden recreation ground to Morden Park. E. & S.

FEBRUARY 3.

Bradfield (Berks) R.D.C.—12 dwellings, Hatch-la., Bucklebury. H. A. Champ, Clerk, Town Hall-chbrs., Blagrave-st., Reading. Dep. £2 2s.

Chailey R.D.C.—10 bungalows at Mongers Farm, Barcombe, and four flats at the Neville housing site, South-rd., Ditchling. Council's Architect, Lewes House, High-st., Lewes. Dep. £5 5s.

FEBRUARY 5.

*†**Banstead U.D.C.**—68 houses, Chipstead-rd. estate. F. L. Shaw, C. Dep. £2 2s.

***Bridgwater T.C.**—12 houses, Parkstone-av. B.E. Dep. £2 2s.

Haydock (Lancs) U.D.C.—32 houses and 12 bungalows, Church-rd. site. R. Main, surveyor, Council Offices, Haydock. Dep. £3 3s.

*†**Southampton C.B.**—Alterations and war damage repairs, Technical College, St. Mary's Institution. Boro' A. Dep. £2 2s. Tenders by March 14.

FEBRUARY 7.

Cleethorpes B.C.—Erection of 24 houses, in four contracts, on the Highgate housing site No. 4. B.E., Council House. Dep. £2 2s. each contract.

FEBRUARY 9.

***Carlisle City.**—Extensions, grammar school. City S., 18, Fisher-st. Dep. £2 2s.

Manchester T.C.—Alterations, adaptations and repairs to Didsbury College for conversion into a teachers' training college. City A., Town Hall. Dep. £1 1s.

FEBRUARY 10.

***Sunderland C.B.**—Primary junior and infants' schools, Thorney Close estate. Boro' A., Grange House, Stockton-rd. Dep. £2 2s.

FEBRUARY 12.

***Hoole U.D.C.**—24 houses, Linden-gr. and Hoole House estates. R. Boot, architect, 22, Newgate-st., Chester. Dep. £2 2s.

***Slough T.C.**—Building materials. E. Gardner, B.E.

FEBRUARY 13.

Bridge-Blean R.D.C.—Erection of six pairs of houses and three blocks of four houses at Bekesbourne, nr. Canterbury. Building S., Council Offices, Old Dover-rd., Canterbury. Dep. £2 2s.

FEBRUARY 14.

***Barnes T.C.**—14 houses and flats, Kingsway, Lower Richmond-rd., Mortlake, S.W.14. B.E. & S.

***Southend-on-Sea C.B.**—Additions to Earls Hall school. Architect to E.C. Dep. £2.

FEBRUARY 15.

***Egham U.D.C.**—46 houses, Thorpe-rd. estate. E. & S., Fire Station-bldgs., High-st. Dep. £2 2s.

FEBRUARY 17.

Manchester T.C.—Alterations and adaptations to "Lismara," 54, Barlow Moor-rd., Didsbury, and "Forest Hill," South Downs-rd., Bowdon, Cheshire, to form homes for aged persons. City A., Town Hall. Dep. £1 1s.

FEBRUARY 21.

Ashton-under-Lyne.—Erection of 10 old persons' bungalows on various sites. A. T. Kemp, M.I.Mun.E., Municipal Offices. Dep. £3 3s.

FEBRUARY 23.

***Croydon C.B.**—Modernising sanitary accommodation, Ingram school, Thornton Heath. Chief Education Officer. Dep. £1.

***Croydon C.B.**—Kitchen and dining hall, St. Mary's R.C. school, Wellesley-rd., and classroom, St. Chistopher's school, London-rd., Thornton Heath. Chief Education Officer. Dep. £1 each.

***Lincoln (Lindsey) C.C.**—Modern school, Spilsby. A. R. Clark (A.), County A., Lincoln. Dep. £3 3s.

FEBRUARY 26.

***Harpenden U.D.C.**—18 houses, Batford (North) estate. J. H. Leech (F.), E. & S. Dep. £1 1s.

NO DATE.

Brownhills U.D.C.—Erection of 52 houses, four shops and eight flats, Bridge-rd., Shelfield, site. Jennings, Homer & Lynch, architects, 3-5, Church-st., Brierley Hill, Staffs.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JANUARY 23.

*†**Northamptonshire C.C.**—Installation of electrical and heating services in three schools, County A., Northampton.

JANUARY 24.

*†**Isle of Ely C.C.**—Installation of heating and hot water supplies, school, Whittlesey. County A., March.

JANUARY 27.

*†**Isle of Ely C.C.**—Installation of central heating, Wilburton Manor children's home. County A., March. Dep. £2 2s.

Stockport C.B.—B.S. (Materials).

JANUARY 29.

Bebington B.C.—E. & S. (Materials).

JANUARY 30.

Matlock U.D.C.—E. & S. (Materials).

JANUARY 31.

Morecambe B.C.—S. (Materials).
Wembley B.C.—B.E. & S. (Materials).

FEBRUARY 1.

Durham C.C.—E. & S. (Materials).

FEBRUARY 2.

St. Marylebone B.C.—C. (Materials).
Wigan C.B.—Boro' E. (Materials).

FEBRUARY 3.

Deal B.C.—E. & S. (Materials).
Mitcham B.C.—E. & S. (Materials).

FEBRUARY 5.

Bermondsey B.C.—C. (Materials).
Bucks C.C.—County S. (Materials).
***Halifax C.B.**—Outside painting of houses. B.E. Dep. £1 1s.
Warrington C.B.—B.E. & S. (Materials).

FEBRUARY 8.

Hammersmith B.C.—E. & S. (Materials).

FEBRUARY 9.

Rayleigh U.D.C.—E. & S. (Materials).

FEBRUARY 10.

Enfield U.D.C.—E. & S. (Materials).
Felixstowe U.D.C.—E. & S. (Materials).

FEBRUARY 12.

Shoreditch B.C.—E. & S. (Materials).

FEBRUARY 14.

Wortley R.D.C.—E. & S., Council Offices, Grenoside, Sheffield (Materials).

FEBRUARY 17.

Cannock U.D.C.—E. & S. (Materials).

FEBRUARY 19.

Northumberland C.C.—S. (Materials).

FEBRUARY 26.

Hereford T.C.—City S. (Materials).

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JANUARY 31.

***East Retford T.C.**—Pumping station, Whisker Hills waterworks. B.E. Dep. £2 2s.

FEBRUARY 7.

St. Albans T.C.—Reconstruction of Green-la. (5,000 sq. yds. carriageway and 2,700 sq. yds. footpath, etc.). City E. & S., 16, St. Peter's-st., St. Albans. Dep. £2 2s.

FEBRUARY 12.

Leicester T.C.—Roads and sewers in connection with Aikman-ave. flats. City S., Town Hall. Dep. £1 1s.

GENERAL BUILDING WORK

(LONDON)

Dagenham.—Office Additions.—W. J. Fraser & Co., Ltd., are to erect additional offices at 353, Rainham-rd. South. Mr. Walker, staff architect, is in charge of scheme.

Dagenham.—Public House.—Planning Com. approved application by Charrington & Co., Ltd., Anchor Brewery, Mile End-rd., E.1, for a proposed public house at Green-la. Firm has its own architects' department.

Hornchurch.—Factory Extension.—J. H. Mason, 160, Carlton-rd., Romford, is architect for extension to factory building for Royce Products (Romford), Ltd.

Kensington.—Dwellings.—Sketch plans are being prepared by B.C.'s Architects' Dept. for 14 dwellings to be erected at Nos. 11-17 and 28-32, Wormington-rd.

Kensington.—Dwellings.—B.C.'s Architects' Dept. is preparing sketch plans for six dwellings at Nos. 38, 39 and 40, Ladbroke-sq.

Kensington.—Dwellings.—Stage 1 planning approval has been obtained and B.C.'s Architects' Dept. is preparing sketch plans for eight dwellings to be erected on sites of Nos. 9-15, Chepstow-cres.

Kensington.—Dwellings.—Stage 1 planning approval has been obtained and alternative sketch plans are being considered in consultation with M.H. for 32 dwellings to be erected at Holland-st. (library) site. B.C.'s Architects' Dept. is in charge of scheme.

Kensington.—Dwellings.—Sketch plans prepared by B.C.'s Architects' Dept. for 16 dwellings on sites of Nos. 38-48, Elgin-cres. and No. 76, Ladbroke-gr., have been approved.

Kensington.—Dwellings.—B.C. has received stage 3 planning approval to plans prepared by Architects' Dept. for 32 dwellings at Walmer-rd.-Clarendon-rd. (second phase).

Kensington.—Dwellings.—B.C. has received stage 3 planning approval to plans prepared by Architects' Dept. for 15 dwellings to be erected at Old Brompton-rd.

Kensington.—Dwellings.—Bills of quantities are being prepared for eight dwellings to be erected on sites of Nos. 105-111, Lansdowne-rd., for which B.C.'s Architects' Dept. has prepared plans.

Kensington.—Dwellings.—Tenders to be invited in April for 43 dwellings for B.C. at Henry Dickens Court (balance of 3rd phase). Architect, Edward Armstrong, F.R.I.B.A., 19, Manchester-sq., W.1.

Rainham.—Workshop.—Geo. A. Macdowall & Francis, 377, Barking-rd., E.13, are architects for workshop building at Station Wharf for John Newman, Ltd.

Rainham.—Factory Extension.—Murex, Ltd. intend making an extension to their factory at Ferry-la.

Surbiton.—Flats.—Plans for 144 flats for B.C. to be erected at Chessington Court have been prepared by Culpin & Son, F.R.I.B.A., 3, Southampton-pl., W.C.1.

Wembley.—Repair Shop and Showrooms.—Campbell Symonds & Co., Ltd., propose to erect repair shop and showrooms at Empire Garage.

(PROVINCIAL)

Accrington.—T.C. approved plans for new pithead baths at Huncoat Colliery, for N.C.B., and alterations at Broad Oak Printworks, for Calico Printers' Association, St. James-bldgs., Oxford-rd., Manchester.

Amble.—Architects for proposed additions to Amble R.C. school are Reavell & Cahill, Lloyds Bank-chbrs., Alnwick.

Ashby-de-la-Zouch.—U.D.C. propose 24 houses at Moira-rd.

Ashover.—Chesterfield R.D.C. approved plans for a preserves factory at Milltown, for Butterley Preserving Co.

Bakewell.—R.D.C. propose 10 houses at Stoney Middleton, four at Calver, six at Eyam Woodlands and 12 on site to be selected.

Barnard Castle.—U.D.C. is to build 130 houses on the Green-la. estate. Plans by the Surveyor, Council Offices, Barnard Castle.

Birmingham.—T.C. propose two children's homes at California estate and two at Garretts Green estate, at £18,400. H. J. Manzoni, City Engineer.

Bishop Auckland.—U.D.C. is to build 30 houses and a community hall at Coundon. Plans by the Surveyor, J. Ford.

Blackburn.—E.C. approved estimate of £140,400 for Witton Park Cty. Sec. Sch.; seek loan of £11,513 for Kelsall-av. Nursery Sch.

Blackburn.—Governors of Grammar School propose extensions, at £10,000.

Blackburn.—R.D.C. propose erection of a complete hamlet at Johnson-rd., Eccleshill.

Blackpool.—B.C. approved layout for 141 dwellings at Mereside estate; to negotiate with R. Fielding & Son, Stanhope-rd. Works, for the erection of 15 houses at Tyrone-av.

Bolton.—B.C. approved plans for:—Printing works at Manchester-rd. and Bradford-av., for Tillotsons (Bolton), Ltd.—Extensions to engineering works at Weston-st., for Wm. Hare, Ltd.—Additions to St. Columba R.C. School, Ripley-st., and St. Osmund's R.C. School, Blenheim-rd., for Diocese of Salford.—Junior and infant school at Red-la., for E.C.—Office extension at Spring-st., for Duckworth & Hine.—Nursery off Crumpsall-st., for Greenhalgh & Shaw, Ltd.

E.C. seek M.E. approval for High Lawn & Johnson Fold C.P. Schools.—T.C. to lease site at Lostock to De Havilland Propellors, Ltd., for extensions to factory.

Bootle.—B.C. to approve erection of telephone exchange at Queen's-rd.—E.C. propose new Tech. Grammar Sch. at Dunnings Bridge-rd. (1951 programme).

Brighouse.—T.P. approval given to R. Lumb & Co. to build six houses at Francis-st.

Bury.—T.C. propose adaptation of huts at Lowercroft South Camp into 63 dwellings, at £15,750.

Bury.—T.C. propose erection of a bus station and depot at "The Mosses."

Chester.—Rustproof Metal Windows Co., Ltd., propose large extensions to works.—R. Dixon-Bate, Ltd., propose further extensions to works.

Coventry.—Jaguar Cars, Ltd., have acquired a large M.O.S. factory for adaptation as new works.—Triumph Engineering Co., Ltd., propose extending factory by 20 per cent.

Coventry.—T.C. seek loan of £189,026 for the erection of additional council offices at Earl-st. Donald E. E. Gibson, City Architect.

Disley.—R.D.C. propose erection of "Gregory Type" flats.

Dudley.—B.C. approved erection of a head post office at King-st., for M.W.; to prepare plans and quantities for the erection of aged persons' dwellings at Laurle-rd., Priory estate.

Durham.—Sites are under consideration by the City Council for the building of a new corporation depot to cost £23,000. City Engineer is J. W. Greene.

Farnworth.—U.D.C. approved layout for 22 houses at Buckley-la. No. 1 estate.

Garstang.—R.D.C. seek M.H. approval to erection of 30 houses at Kepple-la. estate, and 10 at Smallwood Hey site, Pilling; propose 10 houses at Inskip and eight at St. Michaels.

Gateshead.—E.C.'s building programme for this year is expected to include the Dryden-rd. Grammar School with the Lobley Hill Modern School on the reserve list. The chief architect is H. J. Cook, Municipal Bldgs., Gateshead.

Gosforth.—U.D.C. has received sanction to purchase land for 96 houses. Plans by the surveyor, Clifford Wyld, Council Offices, Gosforth, Newcastle-upon-Tyne.

Gosport.—B.C. propose houses as follows: 40 at Hawkins Land at Bridgemary; 40 at Wilmott-la.; 20 at Avenue and Queen's-rds.; and 30 at Clayham.

Hexham.—R.D.C. to acquire land at Broomley for a further 24 houses.

Ilkeston.—B.C. to prepare quantities and invite tenders for 86 houses at Kirk Hallam estate, and prepare layout for 300 houses.

Jarrow.—Corporation is to build 24 flats at an estimated cost of £35,372. Plans by Borough Engineer, H. T. Perkins.

Jarrow-on-Tyne.—Page, Son & Hill, 75, King-st., South Shields, are architects for proposed hotel, Leam-la., for North-Eastern Breweries, Ltd., Stockton.

Keswick.—U.D.C. Surveyor (Mr. J. Jenkins) has been asked to prepare plans for 10 houses on the Windebrowe-av. estate.

Leeds.—Reg. Hospital Brd. propose the erection of 300-bed sanatoria in Bradford-Halifax-Huddersfield area.

Liverpool.—T.C. to lease site at Mather-av. and Booker-av. to Celebrated Ebbs Houses, Ltd., for development.

Longbenton.—U.D.C. is to build 48 houses on the Crossley estate, including 12 for old people. Surveyor is A. E. Sweetman.

Manchester.—C.W.S., Ltd., propose new store on site of Deansgate Arcade.

Manchester.—T.C. propose old people's homes at Sale-rd., Wythenshawe, and Woodhouse-rd., Moss Nook, at £60,000. L. C. Howitt, City Architect.

Matlock.—U.D.C. approved plans for alterations at "Tor Hosiery Mills." The Dimple, for Tor Hosiery Co., Ltd.; fire stn. and firemen's houses at "The Limes," for C.C.

Middlesbrough.—Extensions are proposed to dispensary at Middlesbrough Gen. Hospital. Architects, Garbutt, Archibald & Archibald, 23, Albert-rd., Middlesbrough.

Morpeth.—Plans are to be prepared for pithead baths at Pegswood Colliery. Plans are by the Architects' Dept., N.C.B., Ashfield Tower, Gosforth, Newcastle-on-Tyne.

Nant Conway.—R.D.C. propose houses at Eidda. Architect, J. Isgoed Williams.

Newcastle-on-Tyne.—Milburn Estates propose eight-storey block of offices and shops in Pilgrim-st. and Dean-st. Plans by A. S. Ash, 66, Great Cumberland-pl., London, W.1, have been provisionally approved.—Cackett, Burns Dick & McKellar, 21, Ellison-pl., Newcastle-upon-Tyne, are architects for a warehouse on Gibson estate.—Adam Robertson & Son, Leazes Park-rd., Newcastle-upon-Tyne, are to make additions and alterations to their premises. Architects, Dryden & Shaw, 6, Market-st., Newcastle.

Newcastle-on-Tyne.—Cackett, Burns Dick & McKellar, 21, Ellison-pl., Newcastle, are the architects for a proposed warehouse in Melbourne-st., for the Gibson estate.—Norman Jones & Rigby, Lord-st., Southport, have prepared plans for extending the sales floor in Prudhoe-st., for Marks & Spencer, Ltd.—Plans have been approved for a large block of shops and offices in Pilgrim-st., Low Bridge-st. and Dean-st., for Milburn Estates, Ltd. The architect is A. S. Ash, 66, Great Cumberland-pl., London, W.1.

North Riding.—C.C. to borrow £9,000 for alterations, etc., at "Ashfield House," Old Malton-rd., Malton.

Northumberland.—C.C. has approved final plans by the County Architect for the proposed county modern school at Wooler, to cost £100,515. Sketch plans have also been approved for the Newburn West Denton primary school, to cost £93,000.—Additional classrooms are to be built by the C.C. at the Gosforth Sanderson Orthopædic Hospital School to plans by the County Architect.—The following schools are expected to be built this year by the C.C.:—Newburn West Denton, Newburn Secondary Modern and the Blyth Newsham C.P. Junior. The following are on the reserve list:—Prudhoe Secondary Modern, and Wallsend Willington Quay C.P. Infants.—A site of 2.58 acres of land is to be acquired by the C.C. at Wark for a proposed country primary school.

Northumberland.—C.C. to build an ambulance depot at Wideopen. Plans by County Architect, W. W. Tasker, County Hall, Newcastle.

Penrith.—R.D.C. is to convert a former W.L.A. hostel at Lazonby into seven houses.—R.D.C. proposes six houses at Kirkoswald.

Rainford.—U.D.C. to obtain tenders from Mr. James Gee, Wigan, for the erection of further 20 houses.

Rawtenstall.—Boro' S. to prepare plans for houses at Ormerod-st., Water, and adjacent to Isle of Man Villas Lumb.

Rotherham.—B.C. approved plans for licensed premises at junction of Lodge-la. and Upper Wortley-rd., for Tennant Bros., Ltd.; new school at Kimberworth Park-rd., for E.C.

Royton.—Shiloh Mills, Ltd., propose modernisation of No. 2 mill.

Salford.—T.C. seek M.H. approval for washhouse at Holland-st., Pendleton, at £24,000.—Approved plans for:—Extensions to tyre depot at 31-3, Windsor-st., Salford, for India Tyre and Rubber Co., Ltd.—New erecting shop at Crescent Iron Works, Broad-st., for T. Bradford & Co., Ltd.

Scarborough.—C. W. Haynes, Ltd., Scarborough, have offered to erect 10 houses for T.C. at Wreyfield-dr., and negotiations are proceeding.—Baker & Clark, York-pl., Scarborough, have prepared plans for brewery alterations at Worth-pl., for the Scarborough and Whitby Breweries, Ltd.—Wilkinson & Smith, Martins Bank-chbrs., Scarborough, are architects for alterations to the White Heather Laundry, Hoxton-rd.

South Shields.—Newcastle Breweries, Ltd., Haymarket, Newcastle-on-Tyne, are to carry out alterations to the "Golden Lion" Hotel, Boldon-la., and have prepared their own plans.—Page, Son & Hill, 75, King-st., South Shields, have prepared plans for the rebuilding of the "Beehive Inn," Riverdr., and extensions at Rutland-st., for Wright's Biscuits, Ltd.

Stockport.—Montague Burton, Ltd., propose adaptation of "Princes Cinema," Princes-st., as a retail shop with billiards and dance hall on first floor.

Stratford-on-Avon.—T.C. recommended to approve shops and flats at Meer-st., at £8,000.

Sunderland.—T.C. to purchase 18½ acres at Nookside for temporary housing purposes.—Newcastle Breweries, Ltd., Haymarket, Newcastle-on-Tyne, are to carry out alterations to the "Aquatic Hotel," Bridge-st.—Co-op. Wholesale Society, Ltd., are to erect shops on vacant land at Ryhope-rd., to plans by the C.W.S. Architects' Dept., 90, Westmorland-rd., Newcastle-on-Tyne.—Sir James Laing & Sons, shipbuilders, are to reconstruct berths "D" and "E" at their Deptford Shipyard.—Matkin & Hawkins, Barclays Bank-chbrs., Fawcett-st., Sunderland, have prepared plans for reinstating war damage at White's Market, South-st.—Durham District Bus Services, Ltd., are to erect a garage at Toward-rd.—T.C. to negotiate for the purchase of five acres near St. Luke's-rd., for a proposed bus depot.—T.C. has decided to let contracts for the erection of 36 houses under the small builders' scheme.

Swinton and Pendlebury.—Parishes of St. Mary, St. Charles and St. Mark propose erection of a new junior and infant school, at £100,000.—Parish of St. Charles propose new church, at £10,000.

Wakefield.—R.D.C. propose 12 houses at Crofton and 12 at Sharlston.

Wallasey.—E.C. appointed J. Short, 5, Bereysbldgs., George-st., Liverpool, as quantity surveyor for Ormonde-st. R.C. Secondary Modern School, and W. Ellis as architect for dining-room and extensions to kitchens at Moreton R.C. School.

Wallsend.—T.C. has been asked by M.H. to build 200 extra houses during the next two years to house additional miners needed at the Rising Sun Colliery.

Wharfedale.—R.D.C. propose erection of houses for aged on various sites.

Whitby.—U.D.C. has asked M.H. to allow the Council to build a new theatre to mark the Festival of Britain.

Wolverhampton.—B.C. approved plans for:—Extensions to offices at Broad-st. Wharf, for Clough, Smith & Co., Ltd.—Extensions to foundry, Hobson Works, Fordhouses, for H. M. Hobson, Ltd.—Extensions to woodworking factory at Temple-st., for I. Blankstone, 43, Wills-rd.—Single-storey office and factory accommodation at Wyrley-st., Alma-st., for Wade Smith & Co., Ltd.—Extensions to offices at Sutherland Sawmills, Bilston-rd., for J. S. Hukman, Ltd.

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TENDERS

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† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H. M. Government Departments*.

Alsager.—Six houses at Meadow Croft, for U.D.C.: *H. Hibberts, Oakdene, Pikemere-rd., £5,146.

Birkenhead.—120 houses for Housing Committee: *Lloyd & Cross, Birkenhead.

Bishop Auckland.—40 steelhouses and all necessary works at Coundon: *Bell & Ridley, Durham City, £51,103.

Blackpool.—Erection of Toronto-av. C.P. School, for E.C.: *Bristol Aeroplane Co. (Housing), Ltd., Weston-super-Mare.

Bolton.—Houses for B.C. 60 and 44 at Johnson Fold No. 2 estate: *Roy & Partners, 25, Cross-st., Manchester; 20 houses and flats at Willows-la. estate: *George H. Pearse & Son, Ltd., Bolton.

Brighouse.—Erection of six houses on the Cairn-la. estate, for B.C.: *Mr. C. Whitehead, Brighouse, £6,500.

Carlisle.—Houses for T.C. 16 at Belah: *John Laing & Son, Ltd., Dalston-rd., Carlisle; 14 at Harraby: *Building & Repairs Co., 9, Annet-sq.; 10 at Harraby: *J. Graham. (All of Carlisle.)

Chesterfield.—10 houses at Newbold estate, for T.C.: *A. Needham, 7, Rhodes-av., Chesterfield, £10,742.

Colne Valley.—22 houses at Derker-av., for U.D.C.: *Holroyd, Brook & Eaglands, Ltd., Old Bank, Slaithwaite, £19,289.

Derby.—Extensions at St. Dunstan's School, for E.C.: *R. A. Wheeldon, £5,629.

Flintshire.—Contract 11 for erection of Technical College at Kelsterton, Connahs Quay, for E.C.: *Alun Edwards, Ltd., Cefn-y-Bedd, Wrexham.

Glasgow.—New primary school at Priesthill. Mr. John MacNab (F.), architect, 129, Bath-st., Glasgow, W.C.2: *MacTaggartt & Nickle, Ltd., Glasgow, £49,366.

Greenock.—New housing at The Shankland-rd. Robert L. Rankine, M.Inst.C.E., A.M.T.P.I., etc., Old Harbour Trust Offices, Wallace-sq., Greenock:

*James T. Aitkenhead, General Contractor, Greenock.

Ham.—Erection of 36 flats at Woodville-rd.: *R. G. Taylor, Ltd., Hampton, £48,508 14s. 2d. (Subject to approval of M.O.H.)

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Hebburn-on-Tyne.—30 houses at Mill-la., for U.D.C.: *Direct Labour.

Keeth.—12 houses, for R.D.C.: *Brown Bros., Richmond, Yorks.

Lanarkshire.—Area garage for the School Meal Services, Carfu-rd., Craigneath. Mr. William Watt, architect, Albert-rd., Motherwell-Wishaw: Excavation, brick, building and allied, etc., works, Bone, Connell & Baxters, Ltd., High Blantyre, £7,505; joinery, carpentry and allied, etc., works, Lanarkshire Direct Labour Department, Motherwell-Wishaw, £1,706; plumber, sanitary engineering and allied works, Thomas N. Simpson, Blantyre, £667. (Other contracts let.)

Leamington Spa.—Houses at Stud Farm estate, for B.C.: *Sayce Bros. & Co., Tachbrook-st., £27,712 (22); *A. C. Lloyd (Builders), Ltd., 4, Dormer-pl., £8,260 and £8,193 (12); *Thompson Partners, £8,668 (six). (All of Leamington Spa.)

Leyland.—80 dwellings at Broadfield estate, for U.D.C. 10 houses and 20 flats: *Marland Bros., Ltd., 21, Eden-st.; 30 houses: *A. Threlfall, Ltd., Farington Sawmills; 20 houses: *J. Tomlinson, Ltd., Sawmills, Towngate. (All of Leyland.)

Liverpool.—Extensions at Alsop High School, for E.C.: *Tysons (Contractors), Ltd., Dryden-st., £42,682; alterations and additions at Mossplts-la. C.P. School: *F. C. Bloomfield & Co., Ltd., 71, Almonds-green, £18,091.

London (Air Ministry).—Contracts to value of £500 or over for week-ended January 13.

Building Work: W. & C. French, Ltd., Buckhurst Hill, Essex. John Bissett & Sons, Ltd., Aberdeen. C. H. Batten, Minehead. John Mowlem & Co., Ltd., London, S.W.1.

Painting Work: Bruce Mackenzie, Ltd., Aberdeen. Peter McKerracher & Sons, Ltd., Glasgow. Spraycraft, Co., Ltd., Bromley, Kent.

Heating and Hot Water Services: Ashwell & Nesbit, Ltd., Leicester. *Maintenance Work:* G. & J. Seddon, Ltd., Little Hulton, near Bolton, Lancs. Perry & Williamson, Ltd., Wolverhampton. W. B. & F. T. Archer, Handsworth, Birmingham.

¶London (M.O.W.).—Contracts placed by M.O.W. for week ended January 6:—

Bucks: N.S.H.C. Hostel, Cippingham, near Slough. Internal and external decorations, Wm. Hartley & Sons, Wrexham, Slough. *Durham:* Pontop Pike, Relay Television station, Geo. McCall, Ltd., "Kirkside," New Harrington, Co. Durham. *Sussex:* Mayfield Automatic telephone exchange, E. Godwin & Sons, 34, Sackville-rd., Bexhill. *Worcs:* M.N.I., Scotland House, Stourbridge, Repairs and alterations, Cornelius Green & Porter, Hagley-rd., Stourbridge.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended January 6:—

Dumbartonshire: Miscellaneous, Leslie Kirk (1945), Ltd., Glasgow. *Ches:* Painting, J. Lightfoot & Son, Chester; Painting, N. S. Long, Ltd., Poulton-Le-Fylde, Lancs. *Dorset:* Roadwork, G. & G. F. Maidment (Poole), Ltd., Parkstone, Dorset. *Berks:* Flooring, etc., Geo. Linnecor & Son, Ltd., Birmingham 6. *Devon:* Miscellaneous, J. Kerswill & Sons, Ltd., Tavistock. *Wilts:* Roads, sewers, etc., Howard Farrow, Ltd., London, N.W.11. *Surrey:* Miscellaneous, F. W. Honour & Sons, Ltd., East Grinstead. *Middx:* Restoration of stonework, Szerelmey, Ltd., London, S.E.16. *Essex:* Building, Carter & Ward, Wickford, Essex. *Middx:* Miscellaneous, Phillips & Cooper, Ltd., Stanmore, Middx. *Northumberland:* Painting, D. Humberstone & Co., Ltd., Lough, Lincs.

Newcastle-on-Tyne.—16 houses at Jennifer-gr. Architects, Marshall & Tweedy, 26, Blackett-st., Newcastle: *Wilkinson Bros., High-st., Gateshead.

Northampton.—32 houses at Duston-rd. estate, for R.D.C.: *Chowns, Ltd., Edinburgh-rd., Northampton, £49,287.

Northampton.—Flats at Park-walk, King's Heath, for T.C.: *Clements Bros. (Northampton), Ltd., 64, St. Andrews-st., £37,059 (30); *T. Wilson & Son, Ltd., 67, Sheep-st., £39,451 (30).

Nottingham.—26 aged persons' dwellings at Wyvale-dr., Strelley estate, for T.C.: *J. Powell & Son, 3, Barnstone-rd., Sneinton Dale, £24,651.

Oldbury.—20 houses at Barnford-cres., for T.C. C. B. Eck, A.M.I.C.E., Municipal Bank-chbrs., Oldbury: *A. G. Woodall, 1, Springfield-av., Langley Green, Oldbury, £25,224.

Overton.—Houses for R.D.C. Six at Horsemans Green and six at Overton: *Martin Evans, Ltd., Wrexham, £11,497 and £9,414 (subject to M.H.).

Salford.—Branch library at Great Clowes-st., for T.C.: *W. Fearheley & Sons, Ltd., Salford.

Scarborough.—24 houses at Eastfield site, for T.C.: *A. Schofield (Builders), Ltd.

Stoke-on-Trent.—48 houses at Blurton Farm estate North, for T.C.: *G. & J. Seddon, Ltd., 55, Duke-st., Fenton, Stoke-on-Trent.

Sunderland.—Erection of Pennywell East County Primary junior and infants' schools, for E.C. Architects, W. & T. R. Milburn, 17, Fawcett-st., Sunderland: *D. & J. Ranken, Ltd., Stockton-rd., Sunderland, £156,804.

Sutton Coldfield.—Houses for B.C. at Falcon Lodge estate: *Butler Bros. (Birmingham), Ltd., 150, Sutton-rd., Birmingham, £50,480 (40); *Ashworth & Steward, Ltd., 26, Commercial-st., £30,240 (24); *Yenton Building Co. (1938), Ltd., 52, Graveley-hill North, £49,865 (40); *Cressley Bros. (Builders), Ltd., 111, Albert-st., £17,640 (14); *A. E. Jones, 37, Hansons Bridge-rd., £12,581 (10). (All of Birmingham.)

Uddingston.—56 houses at Sheepburn-rd.: *James Ritchie (Builders), Ltd., Uddingston.

Wakefield.—Detective training college at Bishopgarth, for West Riding Standing Joint Committee: *M. J. Gleeson, Ltd., Sheffield, £27,300.

Wallsend.—Alterations, etc., to the time offices of the Thermal Syndicate, Ltd., Wallsend. Architects, L. J. Couves & Partners, Carliol House, Newcastle: *Peter Edwards, 33, Back Causey-st., Newcastle.

Walsall.—New factory at Wisemore estate, for B.C.: *Deacon & Boardman, Ltd., £13,204; 16 maisonettes at Green Lane: *Rock & Downes, Ltd., 115, Walsall-rd., Aldridge, £30,172.

Woolwich.—Erection of shops and flats on the Coldharbour estate: *Halse & Sons, Ltd., 5, Chapelhill, S.E.18, £100,600. (Subject to M.O.H. approval.)

Woolwich.—Erection of 64 houses on the Coldharbour estate: *E. H. Smith (Croydon), Ltd., £83,700.

Worsborough.—Houses for U.D.C. at Elm House estate: *Rawson & Porter & Son, 76, Vernon-rd., Ward Green, Barnsley, £15,102 (12); *C. F. Ibbottson, Windyridge, Windmill-la., Wombwell, £22,948 (18).

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